

AMERICAN SEA POWER AND GREAT POWER COMPETITION:
HOW THE U.S. MUST RESPOND TO CHINA AND RUSSIA'S GROWING NAVAL
CAPABILITY

by
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Abstract

American sea power has diminished significantly since the end of the Cold War. The loss of sea power relative to rising great power competitors risks the ability of the United States to adequately advance or defend its national interests in war or in peace. The current rise of China as a sea power and resurgence of Russia as a growing undersea naval threat pose new challenges for the U.S. Navy. The purpose of this research was to determine if the Navy was prepared to meet this challenge and if not, to identify deficiencies and make recommendations for improvement. This research was conducted using a historical case study approach in which several eras were reviewed and analyzed for their lessons on sealift and naval power and their implications for today. World War II, the Tanker War of the 1980s, and the British Falkland Islands campaign were studied in regard to their implication on sealift and maritime logistics. World War II, the latter part of the Cold War, and the era of the Global War on Terror were then studied for lesson related to naval combat power. The study concluded that the United States was not prepared for the challenges of great power competition. Specific deficiencies were noted in the categories of readiness, fleet size, fleet composition, shore-based infrastructure, strategy, and doctrine and training. Lessons from the historical case studies were applied to develop a series of recommendations which, if implemented, could better prepare the United States for great power competition. Reinvigorating American sea power requires a significant national investment which is only possible through the political will of policy makers based on an engaged public.

Thesis reviewers: Dr. Brett Decker, LCDR Ken Foos, USN (Ret.), Dr. Nicholas Reynolds

This paper is dedicated to...

my wife Liz, whose love, patience, and support made this work possible;

my daughters, Florabelle and Viola, whose futures are bound with that of their country;

my grandfather, who inspired me with a love of the sea;

*and to all the American sailors and mariners, past, present, and future, who have
ventured forth across tumultuous seas to answer our country's call and to protect and
defend our Liberty and our way of life.*

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Table of Contents

Title Page.....	i
Abstract.....	ii
Dedication.....	iii
Acknowledgements.....	iv
Table of Contents.....	v
List of Abbreviations.....	ix
Introduction.....	1
Why does sea power matter?.....	2
Key findings.....	3
Methodology.....	7
What is sea power?	8
Why is sea power important to the U.S.?.....	11
Mahan and Corbett: Maritime strategy.....	23
Decline and the loss of sea power.....	26
The costs of sea power.....	28
Public education and engagement.....	32
The research.....	34
Chapter One: Is American Sealift Sufficient for the Demands of Great Power Competition?.....	38
Literature Review.....	40
Sealift today.....	40

Inadequacies of current sealift capacity.....	43
Operations in a contested environment.....	45
The current threat environment.....	47
Literature conclusions.....	49
Methodology.....	50
Case Study – World War II.....	51
Men and ships.....	53
Defensive and offensive measures.....	56
Science and technology.....	59
Forward staging.....	60
American interdiction of Japanese shipping.....	62
Summary and lessons learned.....	63
Case Study – The Tanker War.....	63
Summary and lessons learned.....	68
Case Study – The Falklands War.....	69
Summary and lessons learned.....	73
Analysis.....	74
Conclusion.....	84
Chapter Two: Is the U.S. Navy Ready for Great Power Competition? World War II and the Cold War.....	86
Literature Review.....	88
The Threat.....	89
The Fleet.....	94

The Strategy.....	97
Methodology.....	100
Case Study – World War II.....	101
The Threat.....	102
The Fleet.....	105
The Strategy.....	110
Analysis.....	117
Case Study – 1980s Cold War.....	122
The Threat.....	123
The Fleet.....	124
The Strategy.....	128
Analysis.....	134
Chapter Three: Is the U.S. Navy Ready for Great Power Competition? “...<i>From the Sea</i>” and a Return to the Sea.....	137
The Global War on Terror.....	137
The Threat.....	138
The Fleet.....	143
The Strategy.....	151
Analysis.....	156
Overall Analysis of the Three Cases.....	157
The Threat.....	159
The Fleet.....	161
The Strategy.....	172

Recommendations.....	183
Conclusion.....	184
Conclusion.....	186
Thesis statement.....	186
Chapter 1 – American sealift.....	187
Chapter 2 – American naval power: WWII and the Cold War.....	189
Chapter 3 – American naval power: GWOT and today.....	191
Conclusions.....	193
Readiness.....	196
Fleet size.....	197
Fleet composition.....	200
Infrastructure ashore.....	204
Strategy.....	206
Doctrine and training.....	207
Recommendations.....	210
Limitations.....	218
Recommendations for future research.....	219
Conclusion.....	222
Bibliography.....	224
Curriculum Vita.....	242

List of Abbreviations

A2AD – Anti-access/Area denial	GWOT – Global War on Terror
ADL – Adaptable Deck Launcher	LOCE – Littoral Operations in a Contested Environment
AEW – Airborne Early Warning	LST – Landing Ship Tank
ASBM – Anti-ship ballistic missile	MARAD – Maritime Administration
ASCM – Anti-ship cruise missile	MILDET – Military Detachment
ASW – Anti-submarine warfare	MPF – Maritime Prepositioning Force
BMD – Ballistic Missile Defense	MSC – Military Sealift Command
BRAC – Base Realignment and Closure	NATO – North Atlantic Treaty Organization
CIC – Combat Information Center	NAVSEA – Naval Sea Systems Command
CIWS – Close-in Weapons System	NDS – National Defense Strategy
CLF – Combat Logistics Force	NSS – National Security Strategy
CNO – Chief of Naval Operations	OFRP – Optimized Fleet Response Plan
CO – Commanding Officer	PLAN – People’s Liberation Army Navy
COVID-19 – Novel Coronavirus 2019	PRC – People’s Republic of China
CSG – Carrier Strike Group	RRF – Ready Reserve Force
CVBG – Carrier Battle Group	SAG – Surface Action Group
DFE – Dynamic Force Employment	SLOC – Sea lines of communication
DMO – Distributed Maritime Operations	STUFT – Ships taken up from trade
DOD – Department of Defense	TRANSCOM – U.S. Transportation Command
DWT – Deadweight tonnage	USN – United States Navy
EABO – Expeditionary Advanced Base Operations	USNS – U.S. Naval Ship
ECM – Electronic Countermeasures	USS – United States Ship
EEZ – Exclusive Economic Zone	USSR – Union of Soviet Socialist Republics
EMCON – Emissions control	WWI – World War I
EW – Electronic Warfare	WWII – World War II
F/A – Fighter/Attack	
FONOPS – Freedom of Navigation Operations	
FRAGO – Fragmentary Order	
GDP – Gross Domestic Product	
HMS – His/Her Majesty’s Ship	
IJN – Imperial Japanese Navy	

Introduction

It follows then as certain as that night succeeds the day, that without a decisive naval force we can do nothing definitive, and with it, everything honorable and glorious.

-President George Washington, 1781¹

As the United States has at present no aggressive purposes, and as its merchant service has disappeared, the dwindling of the armed fleet and general lack of interest in it are strictly logical consequences.

-Alfred Thayer Mahan, 1890

The Influence of Sea Power Upon History²

This paper is about American sea power. It examines the state of that sea power today and looks back to key eras of the 20th Century in order to better understand the status of American sea power today. The research draws insights and conclusions from the historical examples in order to develop recommendations for the future. Sea power is critical to the national security of the United States, and we as a nation neglect it at our peril. The thesis of this paper is as follows: American sea power has diminished significantly since the end of the Cold War. The loss of sea power relative to rising great power competitors risks the ability of the United States to adequately advance and defend its national interests in war or in peace. Reinvigorating American sea power requires a significant national investment which is only possible through the political will of policy makers based on an informed and engaged public.

¹ George Washington. *The Writings of George Washington from the Original Manuscript Sources 1745-1799. vol.23.* U.S. Government Printing Office: Washington, D.C. 1937: 341.

² Alfred Thayer Mahan. *The Influence of Sea Power upon History 1660-1783 (12th Ed.).* Little Brown: Boston. 1918: 22.

The ultimate goal of this paper is to demonstrate the importance of sea power to American national security and national interests as well as to identify the risks associated with its current inadequacies. This paper focuses primarily on American naval and maritime logistical capabilities in order to provide an understanding of why they are important, the role they have historically played in accomplishing U.S. strategic objectives, their current deficiencies and the corresponding risks to national security, and what is to be done to ensure that America's sea power is in line with its needs. Making recommendations is easy. Implementing those recommendations is not so simple and will not be cheap. If the taxpayer is going to be asked to foot the bill to restore American sea power, then the case must be made as to why this is so critical. This paper will do just that. Public support must be generated and translated into political will on the part of their elected representatives and policy makers to make restored sea power a reality.

Why does sea power matter?

The public generally takes sea power for granted. It is a subject which should be important to all Americans, no matter their political persuasion, party affiliation or views on America's role in the world. Sea power, both naval and commercial, is essential to American national security and prosperity in both peace and war. For those who favor robust and assertive American influence and presence in the world, naval power provides the strength which backs diplomacy, facilitates the strategic freedom of maneuver of military forces, and enables American expeditionary military operations far from home, where America prefers to fight.

For those less inclined to put American boots on foreign shores, American naval power provides the backbone and deterrent force to keep adversarial nation states far from American shores while guaranteeing the free flow of commerce and information on which the American economy relies. The U.S. Navy has for decades guaranteed global freedom of navigation, allowing the majority of the world's cargo to pass unimpeded across the world's sea lanes, and the free flow of information across the trans-oceanic cables enabling global communications and internet connectivity. The free flow of commerce and information across the maritime domain are under constant threat and will require policing and protection for the foreseeable future.

The United States is a maritime power which relies on commerce to fuel its economy. Whether Republican or Democrat, hawk or dove, whether interested primarily in foreign policy or domestic economic prosperity, maintaining American sea power should be of the utmost importance to all citizens. A look back through history reveals that major powers of the past which have allowed their sea power to decline saw the decline of their national power. Such decline threatened the very way of life of those societies who were no longer able to influence events or adequately defend themselves against foreign aggressors whose sea power was on the rise.

Key findings

The key findings of this paper are as follows:

The Navy is ill-prepared for the rigors and challenges of great power competition. It is far too small, its technological edge has receded, and it has been strategically adrift over the preceding decades. Acquisition of ships and systems have

been plagued by skyrocketing costs and increasing complexity. The Navy is at risk of being a hollow force unless sufficient course corrections can be made. Such corrections include expanding the fleet to a size appropriate for the global challenges it faces, diversifying the fleet and decreasing the cost and risk associated with each ship, expanding infrastructure ashore, developing an overarching strategy to guide naval operations, and establishing doctrine and training for the challenges of modern naval combat. The Navy must focus less on efficiency and more on the redundancy and resiliency that will be required in a time of war.

U.S. sealift capability is deficient yet, in the event of war, remains critical to supporting isolated allies and waging war overseas. An initial deficit of sealift capacity can be overcome if the resources required to rebuild this capacity are prioritized. Given the long lead time required to renew and engage critical ship-building capacity, this must be started prior to the outbreak of war. Defensive measures and offensive tactics will need to be developed and implemented to protect U.S. and allied shipping in the event of conflict at sea. Forward staging areas enable efficient logistics and support to combat operations, however, they are increasingly vulnerable to attack at the outset of war with a peer adversary. Failure to protect its sealift and sea lines of communication (SLOC) will have a debilitating effect on the U.S. ability to prosecute war abroad and on its national security at home.

The U.S. flagged merchant fleet and the pool of trained civilian mariners has been diminished as has its shore-based infrastructure. The long decline of the American merchant fleet has resulted in the U.S. outsourcing the carrying of its goods to foreign ships and crews. This has caused a decreased demand for domestic ship building

and repair resulting in a corresponding decline of the U.S. industrial base and ship-building capability. American shipyards may therefore be unable to keep up with the manufacturing, construction, maintenance, and repair demands of a major conflict. The U.S. should be prepared for the attrition of personnel, ships, and cargo in a future conflict and make early preparations to regenerate capability to back-fill such losses. The U.S. should also invest in recruiting, training, and retaining enough skilled mariners to man the increased number of ships which will be required in the event of war. As it has in all previous conflicts, the U.S. will need to enlist the merchant marine and civilian U.S. flagged vessels to support the massive sealift and supply effort that will be required for any major war abroad.

Expeditionary campaigns conducted an extended distance from home are inherently difficult. The loss of even one supply ship can degrade supported operations, especially when cargo is carried on a limited number of hulls. Civilian merchant shipping, when available, can supplement limited military resources to provide critical support to expeditionary operations far from home. This becomes more difficult in a contested environment and such use of merchant ships comes with limitations because they are not optimized for wartime requirements.

Modern naval combat will likely take place in a littoral environment and will be complicated by the influence of geography, terrain, and civilian air and sea traffic. Busy sea lanes and commercial air traffic routes will muddle both friendly and enemy targeting efforts. Modern ship and aircraft mounted sensors allow detection of ships and aircraft beyond visual range but identifying friend from foe or determining hostile intent in the midst of crowded sea and air traffic can be difficult. Modern missiles

can be launched from 20 or more miles away and travel at high speeds, minimizing the time available for naval personnel to make decisions. Errors by commanders or their sailors are quickly compounded in this compressed timeframe and can result in the ship being sunk by enemy attack or in catastrophic targeting errors. While this creates new hazards for friendly forces and maritime logistics, the enemy will face the same issues, potentially providing opportunities for defensive measures which can mask the identity or location of merchant ships supporting U.S. operations. This evolution in naval combat will threaten the safe passage of sealift in the contested maritime environment.

China is transforming itself into a major maritime power and the biggest U.S. rival at sea. Of all of the challenges of great power competition, the one posed by China is the greatest, especially at sea. It has undertaken a major naval construction effort along with increasing its civilian merchant shipping. Chinese naval technology is advancing in leaps and bounds and is rapidly closing in on U.S. technological advantages. Its increasing fleet size also presents a challenge to U.S. naval superiority and its advanced anti-access/area denial (A2AD) network could frustrate the U.S. ability to operate freely in the western Pacific. Additionally, China employs all aspects of sea power, including its coast guard, maritime militia, merchant fleet, fishing fleet, and other vessels to exert its influence below the threshold of military action.

Russia presents a growing naval threat to the U.S., especially in the area of undersea warfare. While Russian ambitions at sea fall short of China's, it has been quietly reconstituting its naval power, particularly its submarines. It has been putting to sea highly capable, advanced, ultra-quiet submarines which pose a significant threat to U.S. surface and subsurface forces. These submarines, combined with its development of

advanced missiles, pose a serious threat to American and allied forces and infrastructure ashore. Russia aggressively collects intelligence at sea through its deployment of intelligence gathering ships and its extensive tapping of undersea cables. The Russian threat requires that the U.S. Navy not neglect the Atlantic and the waters surrounding Europe even while turning towards the Pacific to address the growing threat of China.

Methodology

The research which follows was conducted using the historical case study methodology. As Stephen Van Evera discusses, case studies provide a strong approach to answering a research question, particularly when experimentation is not feasible and there are not a large number of cases from which to draw.³ By studying past events, similarities to current or future conditions can be observed. Lessons can be drawn which illuminate current capabilities to confront similar situations. This thesis specifically focuses on American sealift and naval capability as it exists today in light of previous eras of maritime competition. The eras chosen were World War II (WWII), the 1980's, including a broad-based look at the U.S. Navy during the late years of the Cold War, the British 1982 Falklands War, and the 1987-1988 U.S.-Iran Tanker War, and finally the years 2001 through 2017, encompassing the Global War on Terror (GWOT).

These eras were selected for the lessons they have to teach about naval power. WWII is the oldest example, but still involves relatively modern naval technology and strategy as well as being a global war with peer competitors in which naval success was

³ Stephen Van Evera. *Guide to Methods for Students of Political Science*. Cornell University Press: Ithaca. 1997: 55.

crucial to overall victory. The cases in the 1980's provide examples of more modern naval threats, including sensors and weaponry as well as the largest naval engagements since WWII. The Tanker and Falklands wars provide key lessons regarding sealift, shipping, and logistics. Finally, the GWOT era helps to explain how the Navy arrived at the situation in which it currently finds itself. This era provides a marked contrast to the strategies and naval threat environment of previous eras, even while it less resembles the modern threat picture with every passing day. For each case study, books, academic, and professional literature are reviewed to glean relevant insights into the subject. Each case is then analyzed, conclusions drawn, and recommendations provided for the modern day.

What is sea power?

Sea power is not strictly a naval concept. In fact, naval power typically corresponds to commercial maritime power. Navies are expensive to build, maintain, and operate. Without robust seagoing commerce to protect, most nations do not see the need for a powerful navy commensurate with the expense. Naval power and maritime commerce are thus intertwined. Alfred Thayer Mahan, the great naval theorist of the late 19th Century, described sea power as resting upon three legs: production, shipping, and foreign colonies.⁴ These merit further discussion as they remain applicable today, albeit in a slightly updated form.

Production, the first leg of the triad, generates the need for commerce. This includes the obvious form of industrial production of goods for exchange. Manufacturers need markets to sell their goods, many of which exist overseas. While the American

⁴ Mahan. *The Influence of Sea Power upon History*. 28.

industrial base has declined over the past decades, for purposes of this discussion its “production” has not. The U.S. economy produces goods and services in which American companies compete for market share in the global economy. Businesses which may not produce goods for sale produce services, information, or other intangibles which rely on supply chains of manufactured goods, hardware, and other items produced around the world. Information vital to American and international markets travels in undersea cables which enable the global economy and communication network. This production therefore creates a demand for commerce from abroad.

Shipping, the second leg, is required to move the goods produced or demanded by the markets. Over ninety percent of the world’s goods for trade are carried by sea.⁵ As such, commercial shipping is essential to global commerce. This leg of the sea power triad includes the vital undersea trans-oceanic cables which allow the instantaneous flow of information across the globe. In order to protect commercial shipping and the maritime undersea communication infrastructure, naval power is required. Navies police the sea lanes, performing constabulary functions during peacetime, maintaining freedom of navigation, countering pirates and other criminal enterprises at sea, and ensuring access to the global commons by commercial enterprise. During wartime, naval power is critical to protecting one’s own commerce, ensuring the safe passage of supplies and materiel to allies and forces abroad, and projecting power at sea and ashore to accomplish national strategic objectives.

Finally, the last leg according to Mahan is colonies. During Mahan’s time, colonies ensured foreign markets and resources along with foreign bases and coaling

⁵ Jonathan Masters. “Sea Power: The U.S. Navy and Foreign Policy.” *Council on Foreign Relations*. Aug. 19, 2019. <https://www.cfr.org/background/sea-power-us-navy-and-foreign-policy>.

stations to support naval forces abroad. While the colonial system of yesteryear has gone by the wayside, this leg of the triad stands firm, but today is represented by foreign ports, bases, and markets. International agreements and trading partnership have replaced colonial dominions. The U.S. continues to maintain critical forward bases around the globe by treaty and host nation agreement. While naval ships are no longer tethered to coaling stations and the limited range of coal fired ships, they require forward ports for logistics, maintenance, and basing proximate to their areas of responsibility.

The People's Republic of China is an adherent of the teachings of Mahan, as evidenced by their recent development of sea power. The world-wide tentacles of China's Belt and Road Initiative and its closely related Maritime Silk Road illustrate the value China places in developing ports and dual-use facilities to support both commercial shipping and naval operations abroad. China by far outpaces the U.S. in terms of ship building, the size of its flagged merchant fleet, major commercial ports, and control of shipping companies. With strong manufacturing production that supplies goods for much of the world, the three legs of China's sea power triad stand firm.

In the history of civilization, there have been two general categories of major powers: continental and maritime. Continental powers must focus their military attention on land borders and neighboring states, some of whom are or may be hostile. Continental powers typically field large land armies to defend their territory or use them to expand into neighboring territories. Such powers have historically included Russia, Germany, and China. Maritime powers on the other hand, enjoy extensive access to the sea as well as the natural buffer zone the sea provides. Although China's focus has turned to the sea, it retains the challenges faced by continental powers, having lengthy

land borders with Russia and India. Both of these countries are seen by China as competitors, if not outright adversaries.

The United States traditionally has been a maritime power. This is due in no small part to the fortune of its geographical situation, being separated by two oceans from the intrigues, conflicts, resources, and markets of Europe and Asia, and possessing peaceful land borders both to its north and south. Additionally, the U.S. boasts thousands of miles of inland rivers and waterways, the most significant of which is the mighty Mississippi River. These waterways give seaborne commerce direct access to the American heartland.

Why is sea power important to the U.S.?

Sea power is important in both war and peace. Commerce is the lifeblood of both the U.S. and global economies. From the earliest colonial times, maritime commerce has been critical to American markets. President Franklin D. Roosevelt said the following, in one of his famous fireside chats early in 1941, before U.S. entry into WWII:

Freedom to trade is essential to our economic life...The Axis Powers can never achieve their objective of world domination unless they first obtain control of the seas...but if the Axis Powers fail to gain control of the seas, then they are certainly defeated...That is why they are risking everything they have, conducting desperate attempts to break through to the command of the ocean. All freedom—meaning freedom to live, and not freedom to conquer and subjugate other peoples—depends of freedom of the seas. All of American history—North, Central, and South American history—has been inevitably tied up with those words, “freedom of the seas.” As the President of a united and determined people, I say solemnly: We reassert the ancient American doctrine of freedom of the seas.⁶

⁶ Franklin D. Roosevelt. “On an Unlimited National Emergency.” Fireside Chat 17. Washington, D.C. May 27, 1941. Transcript. University of Virginia, Miller Center. Presidential Speeches. <https://millercenter.org/the-presidency/presidential-speeches/may-27-1941-fireside-chat-17-unlimited-national-emergency>.

While the maritime threats and challenges faced by the U.S. today in China and Russia differ from those of Nazi Germany and Imperial Japan, the vital importance of freedom of the sea remains the same. Oceans secured by American naval power remain the ultimate defense of U.S. national security and that of its allies. Both China and Russia today present threats to the freedom of the seas that, while localized, have global ramifications.

Seagoing commerce has fueled the American economy throughout its history, despite the long decline of its organic merchant marine. Today there are few U.S. flagged ships and a small number of American mariners. Likewise, the infrastructure and skilled labor required to build, repair and maintain both civilian and military ships have declined to a small number. Most shipping today is carried on foreign flagged vessels made by foreign shipbuilders and crewed by foreign nationals. This is less expensive and avoids the higher costs of American shipping due to U.S. regulations and labor. While the cost savings are beneficial during peacetime, the lack of organic shipping could prove dangerous in the event of war.

The safe passage of goods across the seas is not a given. During a war, even with the security provided by naval forces, logistics or merchant ships transiting the contested sea will be extremely vulnerable. The U.S. Navy has been the guarantor of free access by all to the global maritime commons which allows the carrying trade to flourish. With the decline of the U.S. merchant marine, ships flying flags of convenience, such as those of Panama, Liberia, and the Marshall Islands, and manned by third country nationals have proliferated. Large scale civilian shipping under the flags of countries who lack naval power would not be possible without the security umbrella provided by the U.S. Navy.

Piracy remains a concern around the globe. Hostage taking and ship seizures off the Horn of Africa were well publicized a decade ago. Since then, the U.S. led international counterpiracy task force has largely disrupted pirate operations in those waters. Piracy continues to remain a problem which threatens commerce and the free flow of goods in waters off the coast of Venezuela, Western Africa, and the Strait of Malacca, where outlaws continue to prey on merchant shipping. The seas are vast and hard to patrol. Littoral waters in regions with weak naval presence provide pirates with fertile operating areas and the ability to hide and receive support from shore.

In addition to the carrying trade, the global economy relies on the free and instantaneous flow of information enabled by the growing network of undersea cables. Threats to these cables include physical damage to disrupt transmission of information or the tapping of cables to obtain access to sensitive information belonging to governments, corporations, or individuals. Russia is known to be very interested in targeting these cables to tap or disrupt them for their own advantage.

Countries across the globe are increasingly turning to the sea for natural resources including oil, natural gas, and minerals. Fishing is an important food source for many countries as well, with countries such as China employing massive fishing fleets which operate around the globe. The U.S. enjoys the largest Exclusive Economic Zone (EEZ) in the world, in which it retains the sole right to extract natural resources. As such resources become increasingly valuable, naval power is important to assert and enforce those rights. China is known to operate extremely aggressively, exploiting fisheries and other sources of maritime resources, such as oil, gas, and minerals, claimed by less powerful countries around the globe. Countries lacking naval power find it increasingly

difficult to keep Chinese incursions at bay. Additionally, as the Arctic waterways become increasingly passable with the changing climate, a new venue of competition for resource exploitation and regional dominance is opening. Naval and maritime activity in the Arctic has important implications for American national security.

Sea power enables the U.S. to provide humanitarian aid around the globe during major disasters. U.S. naval forces are often first on the scene to render aid after natural catastrophes such as typhoons, hurricanes, earthquakes, or tsunamis. The U.S. Navy also helps to enforce regulations to protect the environment and natural resources.

American sea power supports American diplomacy. Showing the flag, traditionally an essential mission of the U.S. Navy, has long been a tool of American diplomacy, from the opening of Japan in the mid-19th Century to the voyage of the Great White Fleet of the early 20th Century. Credible American combat power as demonstrated by the navy adds backing to U.S. diplomatic efforts, reassuring friends and allies while warning potential foes. Naval strength helps deter conflict before it starts and provides the capability and power felt most readily by those whom it is intended to influence.

Sea power is just as important during times of war. The U.S. has not fought a major war on its own soil since the Civil War. Its military operations ever since have been expeditionary in nature, with the U.S. sending its forces abroad to fight its enemies in their own backyard. This American way of war requires the capability to move forces to the combat theatre and keep them manned, armed, and supplied throughout the conflict while accounting for attrition inflicted by the enemy. Naval power is necessary to secure the SLOC between the U.S. and its fighting forces to keep the supply pipeline flowing.

Offensive sea power can be used to impose a close or distant blockade, strangling an adversary's freedom of movement at sea and its ability to resupply or import the resources necessary to support its population or feed its war machine. With control of the sea comes the capability of operational maneuver and the ability to insert forces on land or launch strikes at the place and time of one's own choosing, flanking enemy strong points and fixed defenses. A country which lacks adequate sea power to defend its own coastline is highly vulnerable to an adversary who can take control of the sea and use it to its own advantage.

Naval forces often provide the flexibility and maneuverability to deliver the quickest response to crises occurring anywhere in the world. Carrier strike groups, surface combatants, and submarines armed with guided missiles can often be on station within a reasonably short time of receiving orders. These naval units can deliver kinetic strikes via air or missile from a safe stand-off distance without requiring basing rights within the region. This capability, however, is dependent on securing localized sea control. While the U.S. has assumed this as a given over recent decades, it can no longer be taken for granted.

Naval power has been essential and often decisive in virtually every American war since the Revolution. The victory of the French fleet over the British off the Virginia Capes combined with the contemporaneous siege of Yorktown proved to be the decisive event of the War for Independence. The conflicts with the Barbary states and the War of 1812 were largely naval wars fought in no small part over maritime rights such as trade, fisheries, and the freedom of navigation.

American attention turned inward for most of the 19th Century during the age of westward expansion, Manifest Destiny, and the national crisis of the Civil War. While primarily a land campaign, the U.S. Navy played a key role in ensuring the defeat of the Confederacy. The Union's "Anaconda Plan", which helped win the war, relied on the naval blockade of critical Southern shipping and the Navy securing the Army's freedom of maneuver up the Mississippi River to strike deep into the heart of the Confederacy. After the war, American interests did not turn outward again until the closing of the frontier in the late 19th century, following which the U.S. secured its own empire during the Spanish and American war of 1898. This war was highlighted by major Navy victories at the Battles of Manila Bay and Battle of Santiago de Cuba.

While Britain remained the world's preeminent naval power at the turn of the 20th Century, the beginning of the age of the dreadnaught, U.S. naval construction and technology rapidly leapt forward. When World War I (WWI) brought catastrophe to Europe, Allied sea power was critical to the outcome of that epic struggle. Germany attempted to strangle Britain and its allies with its campaign of unrestricted submarine warfare while Britain, and eventually the U.S., worked feverishly to maintain the flow of supplies across the Atlantic. Meanwhile, the British blockade of Imperial Germany starved it of food and supplies, taking a heavy toll on the general population and the German Army. Although Winston Churchill's campaign at Gallipoli ultimately failed, the concept of using sea power to enable strategic maneuver around the grinding war of attrition on the western front was sound. Better execution may have resulted in a victory which would have hastened the end of the war, saving millions of lives on both sides.

Ultimately, American sea power was critical in transporting the American Expeditionary Forces “over there” to the western front, tipping the balance of war towards the Allies.

The events of World War II will be discussed in depth during the case studies, but needless to say, sea power was decisive in both theatres during the war. Since that time, the U.S. has not faced a peer adversary in a hot war. The Soviets did develop a capable navy after being humiliated during the Cuban Missile Crisis by their inability to counter the naval quarantine imposed by President John F. Kennedy. While the Soviets contested the U.S. Navy for control of the sea, there was no direct combat between the two navies. Sea power played an important role in Korea by enabling the maneuver of land forces, including General Douglas MacArthur’s important victory at Inchon. American naval forces also provided vital close air support and naval gunfire support to troops operating on the ground. Vietnam found the Navy parked offshore at Yankee and Dixie Stations, relentlessly striking enemy targets with carrier air power. The Navy also provided naval gunfire support and deployed an extensive brown water force of patrol boats to secure the Mekong Delta and deny its use by the Viet Cong.

The events of the 20th Century led the U.S. to keep its eyes on its maritime interests and events abroad. At the end of the century, following the Cold War, the U.S. Navy no longer faced a credible peer adversary. U.S. sealift capability remained critical, transporting U.S. forces to the Middle East in the build-up to Operation Desert Storm, while naval forces conducted strike operations in support of operations on the ground. Since that time, throughout the GWOT, including the wars in Afghanistan and Iraq, American sealift and naval forces have played a key role, ensuring the delivery of troops and war materiel and conducting strike operations throughout the various areas of

operation. Naval forces are mobile assets which provide U.S. leadership the flexibility to deploy them anywhere in the world those forces can gain access by sea. This capability can no longer be taken for granted with the rise of peer competitors and the proliferation of A2AD networks and advanced missile technology.

Although the U.S. Navy remains the world's premiere naval force, given its world-wide commitments and the challenges it faces around the globe, it is no longer sufficient to ensure America can adequately advance or defend its national security interests. Decades of high tempo operations with an ever-shrinking fleet and insufficient supporting infrastructure have taken a toll. Strategically, the U.S. took command of the sea for granted and stopped preparing to confront enemy naval forces and seize control of the sea, the quintessential naval role. Exquisite multi-billion-dollar warships which can deliver incredible combat power in uncontested environments are irreplaceable, being too valuable, too vulnerable, and too few in number to risk in high-stakes naval combat. The result is a Navy which is increasingly vulnerable and may be unable to deliver victory at sea, or even ensure access to the war zone by other joint forces and their required logistical support. In short, the Navy is not ready for war.

While American history is replete with examples of glorious victories at sea, the current situation of a U.S. Navy unprepared for war is not unprecedented. Political and public support for, and investment in, the Navy has waxed and waned throughout its nearly 250 years. Major drawdowns in forces occurred after every major conflict, which typically left the Navy wanting at the outset of the next war, when it was needed again. The Civil War navy numbered over 600 ships and was at the height of its power in the 19th Century before being allowed to fall into technological obsolescence and diminished

numbers. By the late 1870s, the Navy had fallen to the 12th largest in the world, behind even some South American navies. From this low state the progressive naval era ushered in a sea tide of transformation and modernization including technological innovation and new ship construction, the establishment of the Naval War College and U.S. Naval Institute, and the appearance of important naval thinkers like Mahan and Stephen Luce. This revolution led to the Navy which won the brief but decisive Spanish American War.

After WWI, world-wide disarmament ensued to include naval arms limitation. American obligations under international agreements restricted the size of the Navy, although this was still to be a golden era of naval innovation which would pay dividends for the U.S. during WWII. Fortunately, as the 1930s wore on, prescient political figures including Representative Carl Vinson and President Franklin Roosevelt saw war on the horizon and the unprepared state of the Navy. They ensured passage of legislation funding massive naval growth and preparedness. Even though the Navy was not yet ready when the Japanese attacked Pearl Harbor, the foundation had been laid to modernize and grow the Navy at unprecedented speed.

The cycle was to repeat itself after WWII, at the end of which the Navy had nearly 6,000 ships. By the time of the outbreak of the Korean war less than five years later, the U.S. Pacific Fleet was a shell of its former self due to massive disarmament. President Harry Truman quickly found the Navy no longer had enough ships to institute his preferred strategy of naval blockade in response to the North's invasion. For the first several months of the war, only one aircraft carrier was available to provide air support to U.S. forces ashore at a time when they were rapidly pushed back by massive numbers of

North Korean troops. Thus began a costly struggle on the peninsula, and a necessary reconstitution of American naval forces.⁷

The Navy faced another challenge in addition to the desire for a return to normalcy and a drawdown of forces at the end of its major conflicts. The promise of airpower in both the inter-war and post-war periods called into question the very need for a navy. Champions of air power, including Colonel Billy Mitchell and his disciples, declared in the 1920s that navies were obsolete with the development of military air power. They argued that aircraft could sink ships and provide the defensive capability needed by the U.S. without the large expense of the fleet. In response, the Navy adopted its own robust naval aviation component and refuted the arguments of the air power enthusiasts, proving in WWII the absolute necessity of naval power, including naval aviation, in carrying the fight to the enemy, especially across vast expanses of ocean.

With the emergence of the nuclear era after the war, the Air Force argued that nuclear weapons made the Navy obsolete. Nuclear armed strategic air power would provide all the capability needed by the U.S. to deter and win wars in the future.⁸ As the Cold War unfolded however, along with a series of crises and conflicts including the Cuban Missile Crisis, the Korean and Vietnam Wars, and others, the Navy time and again demonstrated that naval power was indispensable to American national security.

Despite all of this history, at the end of the Cold War, the U.S. again drew down its forces seeking a “peace dividend” and facing what some considered to be the “end of history”. The Navy transformed itself from a force designed to win wars at sea to one

⁷ John Lehman. *Oceans Ventured: Winning the Cold War at Sea*. W.W. Norton & Co.: New York. 2018: 24-25.

⁸ Ibid. 22-23.

which could use the sea at will to project power ashore. For the next twenty years it did precisely this, without significant opposition. The strategic situation began to shift, however, early in the 21st Century. While the U.S. was focused on combatting asymmetric threats ashore, other powers sought to develop the capability to challenge the U.S. Navy and its ability to freely project power unmolested off their shores. China, Russia, and Iran worked feverishly to develop and deploy platforms and weapons which could deny the Navy's ability, or make it too costly, to interfere with their own strategic goals, if not defeat American naval power altogether. China has engaged in a frenetic naval construction campaign along with military modernization and the development of advanced missile, weapon, and sensor technology. With the addition of advanced space and cyber capabilities, China is a formidable opponent in the western Pacific, where it calls into question the U.S. Navy's ability to fight there and win.

While most would agree that neither China nor the U.S. wish to go to war with each other, the U.S. is treaty bound to defend Taiwan against invasion while Chinese national policy calls for reunification with Taiwan, by force if necessary. History is replete with the unintended consequences of strategic decisions and miscalculations which have led to long and bloody wars. Questions about U.S. commitment or capability to use force to successfully frustrate Chinese objectives can lead to instability and increase the likelihood of such a miscalculation. It is therefore incumbent on the U.S. to ensure that it has the capability to fight and win such a war if necessary, preferably deterring war by making it clear that the costs to China would far exceed the benefits.

Russia is also fielding highly advanced capabilities, including a new class of submarines, and increasing their operations in the Atlantic. The *Yasen* class nuclear

submarine is capable of launching the advanced *Kalibr*-class cruise missile and uses the most advanced quieting technology, severely limiting the Navy's ability to track it. It boasts an extended cruising range which allows it to operate off the U.S. East Coast, potentially holding bases and infrastructure within the continental United States at risk.⁹ In the event of a conflict, the U.S. Navy can no longer consider the waters of the Atlantic to be an American lake. Control of the Atlantic may very well be contested, resulting in the Navy having to fight to protect the SLOC so vital to reinforcing and supplying U.S. forces and allies overseas.

Writing in 1954, Samuel P. Huntington observed three phases of American history as relates to the Navy and national policy. It began with the Continental Phase, from the American founding through the closure of the frontier in the 1890s, as briefly outlined in the preceding pages. Naval policy took a back seat to the U.S. focus on dominating the American continent. This was followed by the Oceanic Phase, from the 1890s and the establishment of an American overseas empire, through the world wars. The Navy catapulted in prestige and importance to become America's first line of defense with naval policy focused on fighting and defeating enemy naval forces at sea. At the end of WWII, with the U.S. no longer facing a peer adversary at sea, it entered the Transoceanic Phase, where naval policy again took a back seat to the priorities of the other services, now including the Air Force in addition to the Army. The Navy's main role became ensuring that the U.S. could project power abroad into the heart of the

⁹ Joseph Trevithick. "Admiral Warns America's East Coast Is No Longer a 'Safe Haven' Thanks to Russian Subs." *The Warzone*. Feb. 4, 2020. <https://www.thedrive.com/the-war-zone/32087/admiral-warns-americas-east-coast-is-no-longer-a-safe-haven-thanks-to-russian-subs>.

Eurasian land mass.¹⁰ At the time his analysis was written, this was where the story ended. It could be argued that soon after, the U.S. entered a new combined Oceanic and Transoceanic Phase with the emergence of a powerful Soviet Navy. The U.S. remained concerned with projecting power ashore, but once again had to contend with defeating an enemy at sea.

The end of the Cold War brought a return to the Transoceanic Phase, which the Navy embraced by virtually abandoning its focus on war at sea in favor of projecting power ashore. Finally, the reemergence of great power competition has brought the U.S. once again to the Oceanic Phase, where the Navy's importance has once again ascended to a position at the upper tier of national security priorities. Huntington noted that the composition of the fleet and its operational objectives needed to adjust based on the phase of naval strategy. The U.S. fleet made a major shift at the end of the Cold War, and so it must make a major course change today. China's growing blue water navy, Russian subsurface and other threats, and the increasing threat posed by regional navies such as Iran require that the Navy once again prepare to fight and win at sea to secure American national security interests.

Mahan and Corbett: Maritime Strategy

When considering maritime strategy, two prominent naval thinkers invariably influence the discussion. U.S. Navy Captain Alfred Thayer Mahan, professor at the Naval War College in the late 19th Century, famously wrote *The Influence of Sea Power*

¹⁰ Samuel P. Huntington. "National Policy and the Transoceanic Navy." *U.S. Naval Institute Proceedings*. 1954; 80(5).

Upon History, 1660-1783, and argued fervently for the importance of sea power to the U.S. The Navy had been in its post-Civil War decline but, anticipating the imminent closing of the frontier, Mahan argued that America's future lay with the sea. He argued compellingly that the construction of a robust naval force was necessary to advance American interests.

Mahan is typically associated with the idea of fleet concentration for the decisive naval battle and he remains influential to this day, both within the U.S. Navy and abroad. He argued that the goal of a navy was to seek out the enemy fleet and engage it in a decisive battle, seizing command of the sea. With command of the sea secured, the ability to operate at will in support of national strategic goals would be assured. Without sea control, Mahan argued, a country would be subject to the whims of an enemy who had the naval power to command the sea.¹¹

British naval historian Julian Corbett, a contemporary of Mahan, published his thoughts on naval strategy in *Some Principles of Maritime Strategy*. Corbett's analysis went beyond that of Mahan, focusing on various aspects of naval strategy. He saw the importance of gaining command of the sea when and where possible while also devoting significant attention to the other half of naval power, exercising command of the sea. Command of the sea is often in dispute, so a naval fleet must be able to both concentrate at a decisive time and place, as well as disperse appropriately to exercise command or induce the enemy fleet to give battle. He emphasized the importance of sea lines of communication both to oneself and one's adversaries with all efforts at gaining or exercising command of the sea centered around them. Corbett placed less emphasis on

¹¹ Mahan. *The Influence of Sea Power Upon History*.

the battle fleet than did Mahan, noting that a larger fleet of cruisers and an even larger flotilla of smaller vessels were necessary to exercise command of the sea in furtherance of national objectives. The battle fleet played a critical role in adding teeth to the fleet and in confronting and defeating the enemy's fleet when it could be brought to battle. Corbett analyzed both the offensive and defensive aspects of naval strategy, however his opinion of the defense was that it was always for the purpose of facilitating offensive power when the opportunity arose. Corbett clearly saw the importance of naval operations to the influence of campaigns upon the land. He looked towards the larger strategic picture, advocating coordination between sea and land forces.¹²

While many see the theories of Mahan and Corbett as opposing each other, Professor James Holmes of the Naval War College argues that they should be read in concert. While Mahan put forth a big picture view of sea power to convince his countrymen of its importance and the need to build up the U.S. Navy, Corbett was more concerned with the details and mechanics of naval strategy. Corbett was writing in a country, Great Britain, which already possessed the world's most powerful navy. Holmes notes that Admiral J.C. Wylie, a former instructor at the Naval War College, argued that Mahan was concerned with policy while Corbett dealt with tactics.¹³ It is therefore important to read and understand them both when considering sea power, maritime policy, and naval strategy.

Today, the U.S. Navy has global commitments and responsibilities as the world's most powerful navy. It must be prepared to concentrate the fleet in Mahanian fashion to

¹² Julian S. Corbett. *Some Principles of Maritime Strategy: A Theory of War on the High Seas; Naval Warfare and the Command of Fleets*. (Originally published in London, 1911). Adanson: Middletown, Del. 2018.

¹³ James R. Holmes. *A Brief Guide to Maritime Strategy*. Naval Institute Press: Annapolis. 2019: 118-120.

bring decisive force to bear where necessary, while dispersing the fleet a la Corbett to meet the global presence required to accomplish U.S. national objectives. Captain Robert Rubel, author and former professor at the Naval War College observes the following:

From the late 1940s through the end of the Cold War, the Navy's force structure was adequate to achieve strategic concentration when and where necessary: The service could keep forces constantly on station at three key areas on the Eurasian periphery while also maintaining the capability to surge additional forces if trouble erupted. After 1992, force drawdowns gradually constricted the Navy's ability not only to keep station but also to achieve strategic concentration through surge. In a stable world in which the key threat has been terrorism, this has not had discernible strategic consequences, but with China building a powerful navy that threatens not only Far East friends and allies, but also the whole regime of freedom of the seas, the situation is becoming increasingly dire.¹⁴

Mahan and Corbett would certainly recognize the dilemma in which the U.S. finds itself. Rubel offers potential solutions given the current budgetary situation, however the challenge facing the Navy is daunting. This is the crux of the issue with which the Navy must contend, an issue compounded by deficiencies in the other aspects of American sea power.

Decline and the loss of sea power

History provides numerous examples of powerful maritime states which fell into decline upon the loss or diminution of their sea power. In ancient times, both Carthage and Athens faced catastrophe due to the loss of their naval and sea power, resulting in their inability to defend themselves. Mahan examined how the loss of their sea power impacted Holland, Portugal, and Spain, ultimately resulting in the loss of each of their colonies and power on the global stage. He observed that declining Spanish and

¹⁴ Robert C. Rubel. "Achieving Mass with Fewer Forces." *U.S. Naval Institute Proceedings*. 2020; 146(2).

Portuguese sea power resulted in part from their consolidation of merchant shipping in decreasing number of large hulls. As James Holmes observes, “The search for efficiency inclines shippers to embark cargo in a few hulking vessels—yet that entails strategic peril. Mahan thus suggests that the economies of scale in the shipping industry could turn out to be false economies when things go wrong on the high seas—as they will sooner or later.”¹⁵

Most recently, the British lost their global strength and position with the decline of their sea power. While they were to eventually reclaim the mantle of the world’s foremost sea power, they found that power lacking during the American revolution, with disastrous results. “The tasks were too many, the seas too vast, the sails too few,” to ensure the success of their losing effort to suppress the American rebellion.¹⁶ When the British fleet once again ruled the waves, from Admiral Horatio Nelson’s glorious victory at Trafalgar through triumph in the two world wars, the Royal Navy represented British might. They did not ultimately lose their fleet to enemy action but to economic realities due to the loss of the Empire, the economic costs of WWII, and the high expenses of domestic policy decisions. As a result, today Britain no longer commands the influence or power it once did.

History paints a bleak picture of those maritime powers who let their sea power rot or erode, whether by defeat, choice, or economic reality. The U.S. is not immune to the same fate if it does not draw the appropriate lessons from history and chart a different course. U.S. sea power, especially its merchant and commercial fleet, is in relative

¹⁵ Holmes. *Maritime Strategy*. 74-75.

¹⁶ Rick Atkinson. *The British are Coming: The War for America, Lexington to Princeton, 1775-1777*. Henry Holt: New York. 2019; 226.

decline compared to the growth of both the naval and commercial power of its most significant rival, China. The presence of a rising sea power makes American decline all the more dangerous.

Naval War College Professor James Holmes notes that Americans have a “proclivity for forgetfulness,” particularly concerning its history. The American military often suffers from the same malady, having to relearn lessons of the past, often painfully. He says, “This is a proclivity worth fighting. There is little new under the sun in martial affairs. Sea services that forget and must rediscover past wisdom hobble themselves intellectually relative to competitors who study the past and draw insight from it.”¹⁷ The Chinese are students of history and see themselves as ascendant while the United States is in decline. The research which follows hopes to provide a corrective to those who may have forgotten or never learned the historical lessons of modern American naval success. Not only is it an important heritage, but the lessons to be found therein can guide the way towards restoring American sea power and continued American prosperity.

The costs of sea power

Sea power is inherently expensive to obtain and maintain. One reason other countries have in the past allowed their sea power to lapse is the cost of maintaining it. Ships cost money to build, repair, maintain, crew, and operate. Shipyards, drydocks, and port facilities are costly infrastructure which also must be built, maintained, and manned with skilled workers. Raw materials must be produced, transported, and then turned into hulls and shipboard components. Naval technology and armaments must be developed

¹⁷ Holmes. *Maritime Strategy*. 138.

and engineered, then regularly upgraded and replaced as new technology makes the old obsolete. The modern missiles upon which offensive naval power is based are very expensive to produce, with limited production lines and limited inventories. It is uncertain whether the U.S. possesses the capacity to produce the number of missiles which would be required for major sea combat against an advanced adversary. Long lead times are required for the production of many of the components of naval and sea power, meaning that commercial shipping or naval forces cannot be generated or regenerated overnight. Even if they could be quickly built, skilled crews must be raised and trained before the ships can put to sea.

There is an old saying, “There is a lot of ruin in a navy.” Costly naval forces can be quickly lost in battle. During WWI, it was often remarked that Admiral John Jellicoe, commander of the British Grand Fleet, was the only one who could “lose the war in an afternoon.”¹⁸ Admiral Jellicoe operated very conservatively during the war with that in mind. If the fleet was lost in battle, the German High Seas Fleet could have crippled British supply lines, breached its critical blockade of Germany, and left the British Isles open to predation or invasion by the Germans. The Germans were also conservative, generally keeping their fleet in home waters as a “fleet in being”. During WWII, Japan learned how quickly a fleet could be lost in the Battle of Midway, when in a matter of hours, it lost four aircraft carriers and nearly 300 combat aircraft from which it would never recover.¹⁹ Modern U.S. warships costs billions of dollars each. While they are exquisite in capability, they are relatively few in number. American aircraft carriers, the

¹⁸ Norman Friedman. *Fighting the Great War at Sea: Strategy, Tactics, and Technology*. Seaforth: S. Yorkshire. 2014: 9.

¹⁹ Wayne P. Hughes and Robert P. Girrier. *Fleet Tactics and Naval Operations*, 3rd Ed. Naval Institute Press: Annapolis. 2018: 87.

latest of which cost upwards of \$13 billion, are virtually irreplaceable due their hefty price tag.

The costs attendant to developing and maintaining sea power are important to consider because it is up to the American public, through their elected representatives, to decide at what level to fund U.S. sea power. The public must understand the costs and what they are paying for, because sea power is vitally important to American national security and the American economy. While this paper also argues that American sea power is currently inadequate, particularly its sealift and naval capabilities, it is also true that no small sum has been spent in recent years on American sea power as it currently exists. In order to address the deficiencies noted in this paper, it will be necessary to spend additional taxpayer dollars.

While an ounce of prevention is worth a pound of cure, calls for additional naval expenditures should not be made lightly. The Navy must be a good steward of taxpayer dollars and not spend money frivolously. It must also educate the public and policy makers as to why they should invest in sea power and why the Navy budget is inadequate to its needs. It must also learn to spread risk and capability so that in the event of war, it can continue to generate and sustain sufficient combat power to defeat any adversary in the face of the attrition inherent in warfare.

It may be fairly asked, with the world's largest defense budget by far, how could either China or Russia pose such a serious threat to the U.S., especially in the maritime domain, given their more limited economic resources? In fiscal year 2020, U.S. defense spending was projected to be approximately \$750 billion, constituting just over 15% of all federal government spending and 3.2% of U.S. gross domestic product (GDP). In

comparison, during the height of the Cold War, during the 1960s, U.S. defense spending was approximately 8% of GDP. Meanwhile, U.S. global commitments mean that the Navy is stretched with responsibilities across the globe. It cannot merely concentrate all of its forces to deal with one adversary but must maintain a presence and response capability in other areas in defense of U.S. interests. U.S. defense spending has not kept up as a percent of U.S. GDP, despite greater overall numbers. This fact is reflected in a reduction in the number of forces abroad.²⁰

Despite the massive U.S. military budget, the combatant commander for the Indo-Pacific region, Adm. Phil Davidson, has recently reported that he “lacks the resources and capabilities necessary to implement the National Defense Strategy.” He assessed that the military balance of power with China is becoming “more unfavorable,” resulting in “additional risk that may embolden our adversaries to attempt to unilaterally change the status quo before the U.S. could muster an effective response.”²¹ Indeed, a recent report by the Congressional Research Service reported that this year the number of ships in the Chinese People’s Liberation Army Navy’s (PLAN) battle force exceeds the total U.S. Navy battle force by over 20% (360 ships for China to 29 for the U.S.). It further predicts a significant increase in growth in PLAN fleet size and capability over the next decade.²² History has shown that changes, real or perceived, to the balance of power between potential adversaries can lead to instability, often leading to unintended

²⁰ Michael E. O’Hanlon. “Is US defense spending too high, too low, or just right?” *Brookings Institute*. Oct. 15, 2019. <https://www.brookings.edu/policy2020/votervital/is-us-defense-spending-too-high-too-low-or-just-right/>.

²¹ Bradley Bowman and John Hardie. “Aligning America’s ends and means in the Indo-Pacific.” *DefenseNews*. April 22, 2020. <https://www.defensenews.com/opinion/commentary/2020/04/22/aligning-americas-ends-and-means-in-the-indo-pacific/>.

²² Congressional Research Service. *China Naval Modernization: Implications for U.S. Navy Capabilities – Background and Issues for Congress (Version 233 – updated)*. by Ronald O’Rourke. RL33153 (updated March 18, 2020).

consequences including war. Despite U.S. defense expenditures, the Navy's ability to deter conflict or win a war is in jeopardy.

Public education and engagement

One of the key purposes of this paper is to positively contribute to the discussion of the state of American sea power. While the U.S. will not likely face the fate of ancient Carthage should it fail to maintain its sea power, it would find its influence greatly diminished. The post-WWII, American-led world order would be replaced with a new one guided by authoritarian and anti-western precepts such as those of China. Recommitting to America's sea power, however, is an expensive proposition. Such public expenditures require a level of public support and political will. There is little public discussion, however, among policy makers of the importance of the nation's sea power, the state that it is in, or what needs to be done to fix it. While President Donald Trump campaigned on a 355-ship navy and a few policy makers and elected representatives are giving the subject its due, there has been little attention paid outside of naval policy circles. Domestic politics has been consumed by extreme partisan vitriol and focused elsewhere, as has the President's attention. Sea power and national maritime strategy rarely enter into the conversation.

U.S. national security policy has shifted, however, with the introduction of the 2017 National Security Strategy (NSS) and the corollary 2018 National Defense Strategy (NDS). These documents realign U.S. national security priorities with the challenges of reemergent great power competition, namely the rise of China and resurgence of Russia. The NSS also recognizes the ongoing threats posed by Iran, North Korea, and

transnational terrorism. Sea power is essential to meeting the goals of the current strategy. As Representative Mike Gallagher has said, however, “Calling for more resources to get to 355 [ships] is not enough...we need a national conversation about sea power and the value of an integrated naval force the Congress and the American people can understand.”²³

The public must be educated about the importance of sea power to the U.S., its current state, and what is required to ensure the U.S. has the sea power it needs. Failure to bring the public into the conversation and invest it in the issue will result in a failure to properly address the problem. This is not the first time the Navy has despaired of the public’s lack of interest in sea power. During the years following WWI, the Navy attempted to engage public relations to drum up support for expanding the Navy, partnering with Hollywood and orchestrating public events to call attention and support to the fleet. How to do this today is beyond the scope of this paper. It is imperative, however, that the Navy reinvigorate its efforts to do so.

This paper strives to be a small contribution towards that effort. James Holmes put it succinctly when he said, “Sea power starts at home, and it demands not just the resources but resolve and grit on the part of the people, their government, and the naval establishment. Otherwise resources that might go to seafaring go to other purposes or stay in the ground.”²⁴ American sea power requires an educated and engaged public to turn its attention back towards the sea, the medium through which so much American success has been attained.

²³ Mike Gallagher. “To Deter China, the Naval Services Must Integrate.” *War on the Rocks*. Feb. 4, 2020. <https://warontherocks.com/2020/02/to-deter-china-the-naval-services-must-integrate/>.

²⁴ Holmes. *Maritime Strategy*. 25.

The research

The paper which follows consists of three research chapters. Chapter one is a discussion of U.S. sealift capability. Current literature on the state of U.S. sealift capability is reviewed. Three historical cases are then examined and analyzed. The first, WWII, provides insight into the importance of the massive sealift effort necessary to win a war in two theatres against two peer competitors. This study also briefly looks at the successful U.S. targeting of Japanese shipping, which cut off the resources and supplies Japan required to sustain its population and military forces. The second case study looks at the Tanker War. This study presents lessons on the age of modern warfare and the speed of combat and shortened decision cycle it portends. Convoy operations and mine warfare are considered along with the implications of modern ship construction on naval combat. The final case study looks at the British campaign in the Falkland Islands. It considers expeditionary warfare far from home in the age of missile warfare. The effects that a lack of allies and a diminished sealift capability have on the campaign are examined along with the effects of attrition on limited sealift capacity. All three cases are then analyzed for lessons learned and recommendations are made regarding the sealift needs of the U.S. in the modern era.

The second chapter parallels the first, examining U.S. naval capability in both WWII and the late Cold War. WWII again provides insight into naval operations and strategy during a period of global conflict against peer competitors. This is followed by an examination of the Maritime Strategy and corresponding naval build-up of the 1980s during President Ronald Reagan's administration, which was partly responsible for

winning the Cold War. This case study looks at naval power in the modern sensor and missile era and illustrates how naval power can deter and defeat a peer adversary, even short of war.

The final chapter picks up where the second left off, examining U.S. naval capability during the post-Cold War period. As the lone remaining superpower, the U.S. made a major strategic shift away from preparing for peer war to projecting power abroad against asymmetric threats in furtherance of national objectives. The Navy, with uncontested command of the sea, turned away from focusing on naval combat in favor of supporting operations ashore. The GWOT only served to reinforce this agenda. While the U.S. focused on combatting terrorism, others focused on developing national power, naval modernization and expansion, and developing advanced technology. The U.S. Navy suddenly awoke to an environment where its maritime dominance could no longer be taken for granted and one in which potential adversaries had taken great leaps forward in technology. Almost overnight, the Navy went from unquestioned naval supremacy to facing a situation where it could quite possibly lose at sea. This chapter examines how the U.S. Navy got to where it is today and what it needs to do going forward to reassert its superiority over any potential adversary.

Several broad conclusions can be drawn from the research which pertain both to the American sealift and the Navy. First, fleet readiness has diminished. The Navy has been forced to do more with less, resulting in an increased strain on ships, equipment, and personnel across the fleet. The sealift fleet has aged considerably with most of the ships approaching the end of their service lives. Second, the fleet is too small to meet U.S. national security needs. The Navy which was successful in years past was much larger

and more appropriately sized relative to the threat. Third, the composition of the fleet is inappropriate. Ships are too complex and expensive; risk and capability are consolidated across too few hulls. The fleets are not prepared to sustain damage associated with combat at sea.

Fourth, there is insufficient infrastructure ashore to support American sea power. There are simply not enough shipyards and repair facilities to build new ships at the rate needed or to maintain and repair them at the rate that would be required as a result of the damage and attrition attendant to major sea combat. Additionally, shore-based infrastructure is not hardened against attack nor are there sufficient redundancies in capability to ensure that enemy attack does not disrupt the vital work of building and repairing ships.

Fifth, there is no current overarching strategy to guide the Navy in the era of renewed great power competition. Finally, doctrine for various aspects of major combat operations in support of a maritime strategy have not been fully developed. Naval concepts such as distributed maritime operations, convoy operations, operations in a network denied environment, and joint operations between the Navy, Marines, Coast Guard, and other services do not have established or sufficient doctrine to guide commanders and personnel to take the appropriate actions in the event of peer conflict at sea. The lack of strategy and doctrine has led to insufficient training for naval leadership and personnel, leaving them inadequately prepared for the challenges of battling against a peer naval threat.

The thesis concludes with a comprehensive look at the lessons learned from the research and its derived conclusions. Recommendations are made to address the noted

deficiencies and implications for the future are discussed. While the research concluded that the U.S. no longer possesses the sea power it needs to protect its national security and advance its interests abroad, it also recognizes that efforts are currently being made to address this situation. It is not too late for the U.S. to make a course correction and rebuild its sea power. The author earnestly hopes it does so. What follows is an effort to illustrate the challenges faced and present some solutions to help overcome those challenges.

Is American Sealift Sufficient for the Demands of Great Power Competition?

The influence of the government should make itself felt, to build up for the nation a navy which, if not capable of reaching distant countries, shall at least be able to keep clear the chief approaches to its own...It may be safely said that it is essential to the welfare of the whole country that the conditions of trade and commerce should remain, as far as possible, unaffected by an external war. In order to do this, the enemy must be kept not only out of our ports, but far away from our coasts. Can this navy be had without restoring the merchant shipping? It is doubtful.

*-Alfred Thayer Mahan, 1890
The Influence of Sea Power Upon History²⁵*

A recent essay in the United States Naval Institute Proceedings, entitled “Losing the Great Pacific War for Lack of Ships and Mariners,” paints a stark picture. The piece, written in the form of a hypothetical letter to the Secretary of Transportation in the year 2025, highlights the reasons the United States lost a major war in the Pacific. The letter presents a litany of potential factors, including policies, factual occurrences, and foreseeable possibilities which ultimately had catastrophic effects on American sealift capability, and thus the future war. It points to factors which could lead to such a catastrophe should current trends continue. They include an ageing and dwindling U.S. flagged fleet, an insufficient number of mariners, a lack of ship building and repair yards, inadequate training and technology, and complacency and poor planning.²⁶

²⁵ Alfred Thayer Mahan. *The Influence of Sea Power upon History 1660-1783 (12th Ed.)*. Little Brown: Boston. 1918: 87-88.

²⁶ Douglas R. Burnett and Christopher McMahon. “Losing the Great Pacific War for Lack of Ships and Mariners.” *U.S. Naval Institute Proceedings*. 2019; 145(1).

The letter was similar in style to another piece entitled “How we Lost the Great Pacific War.” This is a letter to a future Chief of Naval Operations that recounts years of failures which led to a hypothetical defeat of the U.S. Navy in a war against a technologically advanced and capable enemy.²⁷ Together, these hypothetical after-action reviews should serve as a warning to those, military, policy maker, and public alike, concerned with the ability of the United States to prevail in a high-end fight and defend her national interests.

In recent years, U.S. policy makers and military leadership have acknowledged the return of great power competition and the rise of peers and near-peers who challenge the American-led world order. For example, the 2017 National Security Strategy (NSS) specifically identifies potential threats from the rise of China and Russia, along with the continuing threats of North Korea, Iran, and violent extremist organizations. The 2017 NSS broadly identifies its four strategic goals as (1) protecting the American people, the Homeland, and way of life, (2) protecting American prosperity, (3) preserving peace through strength, and (4) advancing American influence.²⁸ American sea power and its ability to transport men and material to the theatre of action by sea has been essential to U.S. national security throughout history and has been used in diverse campaigns including from the early 1800s campaign against the Barbary Pirates, to both world wars, and the yet ongoing Global War on Terrorism. But is American sea power up to the task today? More specifically, is American sealift capacity sufficient for the challenges of great power competition?

²⁷ Dale Rielage. “How we lost the Great Pacific War.” *U.S. Naval Institute Proceedings*. 2018; 144(5).

²⁸ United States and Donald J. Trump. *National Security Strategy of the United States of America*. Washington D.C.: White House. 2017.

Before attempting to answer that question, this chapter first reviews the current literature related to U.S. sealift capabilities. After surveying common themes found in the literature, this chapter uses case studies to answer the question. This chapter then analyzes the results, draws conclusions, and considers the implications to public policy and U.S. security strategy.

Literature Review

Overall, the literature focuses on three general themes: the current state of the U.S. merchant marine, concerns and deficiencies regarding sealift capability, and preparation for operations in a contested environment. The review also includes the current and future threat environment to better understand the challenges that may be faced by U.S. mariners who would support forward deployed military forces in the event of conflict.

Sealift today

In 1920, Congress passed the Merchant Marine Act, which is commonly referred to as the Jones Act.²⁹ This legislation governs domestic maritime commerce and requires that only U.S. owned, flagged, and crewed vessels engage in commerce between two or more domestic ports in the United States. The law covers coastal trade and more than 25,000 miles of navigable internal waterways. The goal of the Act was to promote the U.S. merchant marine to advance American economic security and ensure that sufficient U.S. flagged vessels and trained mariners were available to support U.S. military operations overseas if needed. Additionally, the goals of the Jones Act were to prevent

²⁹ P.L. 66-261, 41 Stat. 988, June 5, 1920.

foreign shipping from developing a monopoly on U.S. commercial shipping, promote American shipbuilding and repair capabilities, and support a trained pool of merchant mariners through operation of a robust commercial fleet.³⁰

The Jones Act is not without controversy, but studies have shown that it has helped the United States win wars.³¹ Along with the Merchant Marine Act of 1936,³² the Jones Act provides the backbone which ensures the continued existence of the U.S. merchant fleet which is required to serve as a naval and marine auxiliary during a time of war or major crisis. Administration of the merchant fleet and its integration with the daily operations of the Military Sealift Command (MSC) is carried out by the U.S. Transportation Command (TRANSCOM) through the U.S. Maritime Administration (MARAD).³³

The MSC is composed of approximately 120 government-owned, civilian crewed, United States Naval Support (USNS) ships. USNS ships provide most sealift for the U.S. Navy during routine operations.³⁴ Subsets of the MSC include the Combat Logistics Fleet (CLF) (the only vessels capable of conducting underway replenishment or supporting the fleet in contested waters on a protracted basis) and the Maritime Prepositioning Force (MPF) (consisting of prepositioned ships and equipment in strategic locations).³⁵ Additionally, The Ready Reserve Force (RRF), consisting of approximately

³⁰ Marie C. Ebers Arthur. "Fourth arm of defense: Executing U.S. national security interests in context of the Jones Act." *Naval War College Newport*. 2018.

³¹ Ibid.

³² P.L. 74-835, 49 Stat. 1985, June 29, 1936.

³³ Shashi Kumar. "U.S. Merchant Marine & world maritime review." *U.S. Naval Institute Proceedings*. 2018; 144(5).

³⁴ Ebers, 10.

³⁵ Todd R. Kutkiewicz. "Military Sealift Command's Combat Logistics Force in contested environments." *Joint Military Operations Department Naval War College Newport*. 2017. and Sam J. Tangredi. "Sea basing." *Naval War College Review*. 2011; 64(4):28.

46 ships maintained by MARAD, provides surge capacity of stand-by ships which are required to activate within five days of notification.³⁶

Historically, approximately 90% of all supplies used by U.S. forces abroad have been transported by sea. In 2016, a record high 394,000 metric tons of cargo and 37,000,000 barrels of fuel were transported by the MSC to U.S. forces overseas. The free flow of cargo, characteristic of recent military operations, may not be possible in future wars where the maritime environment is contested and in which the U.S. is unable to maintain sea control. The declining number of U.S. flagged commercial vessels capable of providing surge or expanded shipping capacity may compound this problem.³⁷

The MSC has recently made efforts to adapt to diminishing resources and the changing threat environment. Management techniques are evolving to better assess and maintain readiness and place an increased emphasis on training mariners in order to better prepare civilian sailors to operate in challenging threat environments.³⁸ Efforts are also being made to improve interoperability with joint and coalition forces along with an emphasis on experiential learning such as wargaming, experimentation, and developing a defensive cyber capability. There remains ongoing debate about the recapitalization of ageing vessels to extend service life, the acquisition of used commercial vessels, and the promotion of new construction.³⁹ While many advocate such measures, others argue that the burgeoning national debt and shrinking defense budget mean the Department of Defense (DOD) will be unable to recapitalize its ageing transport fleet on a one-to-one

³⁶ Ebers, 10.

³⁷ Bill McCarthy. "The current state of sealift: A conversation with Capt. Bill McCarthy, Military Sealift Command." Interview by James M. Marconi. *Defense Transportation Journal*. 2017; 73(4):1030.

³⁸ Otto Kreisher. "Bend the curve': Military Sealift Command adapts to new challenges in its operating environment." *Sea Power*. 2017; 60(9):17.

³⁹ Dee L. Mewbourne. "Plan of action: As operating environment grows more volatile, MSC works to gain and sustain competitive advantage." Interview by Richard R. Burgess. *Sea Power*. 2018; 61(9):20.

basis. Instead, the U.S. may have to rely on forward basing at multi-modal hubs such as U.S. bases in Djibouti, Rota, Crete, and Guam to keep its troops supplied.⁴⁰

Rather than try to fight the diminishing U.S. flagged merchant capacity, one study argues the U.S. should adapt to current circumstances. China enjoys a 50 to 1 advantage over the U.S. in the number of commercial oceangoing vessels. Studies suggest that instead of trying to expand the U.S. flagged merchant fleet, the government should encourage American ownership of foreign flagged vessels, which could be legally expropriated by the U.S. government in time of war. The U.S. should also promote the development of scalable expertise in ship construction and repair and promote international law and regulations which would make U.S. shipping more competitive with regards to less expensive foreign competitors.⁴¹ Other policy recommendations include incentivizing investment in U.S. shipping and ship-building industries, encouraging American mariners to sail on foreign vessels when there is a lack of available U.S. hulls, and including foreign shipping capacity in government crisis response plans.⁴²

Inadequacies of current sealift capacity

Several studies argue that U.S. sealift capacity is insufficient for both future high-end conflict and today's needs. An analysis of American sealift during Operation Desert Shield conducted shortly after the end of the war found U.S. sealift lacking. Inadequate capacity caused a reliance on foreign-flagged vessels and the piecemeal and behind-

⁴⁰ Duncan J. McNabb. "We measure success through the eyes of the war fighter." *Air & Space Power Journal*. 2011; 25(4):8.

⁴¹ Michael Webert. "Ownership and control: A red herring in the decline of the merchant marine." *Transportation Law Journal*. 2017; 44(2):107-132.

⁴² Sean T. Connaughton. "Reinventing sealift." *U.S. Naval Institute Proceedings*. 1997; 123(12).

schedule arrival of combat forces. This reliance was due to inadequate maintenance, delayed activation and obsolescence of ships in the RRF, and an inadequate number of U.S. flagged vessels available for charter. These deficiencies were masked by the broad international coalition which allowed for wide-scale use of foreign-flagged vessels and the lack of any Iraqi threat to the logistics effort. The study concluded the U.S. may not face such favorable circumstances and the noted deficiencies may have a negative effect on combat operations and sustainment of forces.⁴³

One risk to the reliance on non-U.S. flagged vessels is that they may refuse to sail into hostile or contested waters, as occurred during both Operation Desert Shield and the Vietnam War. Additionally, the average ship in the reserve fleet is old, having exhausted over 75% of its useful service life. The U.S. flagged merchant fleet has shrunk from approximately 1,000 ships in 1950 to just 78 in 2016 [just 61 as of 2018⁴⁴], and there is a shortage of trained civilian mariners. Airlift capacity is not a viable large-scale alternative to sealift; it takes approximately 300 C-17 air transport flights to carry the load of a single cargo ship. Diminished sealift capability means the U.S. risks not being able to get the Army to the theatre of operations and keep it supplied so that it can fight effectively in future conflicts.⁴⁵

In order to address the declining number of trained civilian mariners, policies have been recommended to support recruitment and training. One proposal is the targeted recruitment of military personnel leaving the service to the civilian merchant marine, which could provide an untapped talent pool of new mariners. Procurement of

⁴³ Andrew E. Gibson and Jacob L. Shuford. "Desert Shield and Strategic Sealift." *Naval War College Review*. 1991; 44(2):6-19.

⁴⁴ Kumar.

⁴⁵ Stephen R. Lyons. "Sailing to victory." *Army Sustainment*. 2016; 48(3):18.

national security multi-mission vessels for training and to supplement the MSC fleet, together with the promotion of mariner training through Domestic Mariner Centers of Excellence, would enhance the current ability to train new civilian mariners for both the MSC and the larger merchant fleet.⁴⁶

Related to the diminished number of available hulls and mariners is the deficiency in the ship repair and construction industries, which has been neglected despite its importance to national defense and the U.S. economy. The complexities of new construction and the maintenance and repair of all types of vessels requires expensive, specialized equipment and highly trained personnel. Inconsistent government funding and repeated failures to pass a budget significantly impact the ability of these shipyards to remain viable due to irregular contracting and canceled or deferred maintenance. Skilled personnel are often laid-off and shipyards closed, neither of which can be easily reversed. Long lead-times for new construction as well as the extended service lives of many current vessels, including the RRF, mean that current ships will require additional maintenance. Any loss of maintenance capability could be disastrous for the future of the fleet. Public-private partnering at these yards and prioritization of funding for the Navy and Coast Guard's repair backlogs would help address these problems.⁴⁷

Operations in a contested environment

While efficiency is a key priority of commercial and peacetime operations, a misplaced focus on efficiency would be a liability in wartime. Several studies argue that the Navy is unlikely to be capable of maintaining sea-control in a high-end fight. With

⁴⁶ Ma'at Jaiborn. "The United States needs a self-sustaining merchant marine." *U.S. Naval Institute Proceedings*. 2019; 145(2).

⁴⁷ Nathan A. Moore. "The U.S. government's role in the ship repair industry." *Naval Engineers Journal*. 2015; 127(4):59-65.

sealift capacity limited to a small fleet of large ships, the loss of just one could be debilitating to U.S. military operations. The current trend of building larger, more expensive vessels for purposes of efficiency creates an unmanageable amount of risk. In the modern environment, such ships are too vulnerable to long-range advanced sensors and precision guided munitions, including missiles and torpedoes. While efficient in a peacetime environment, large ships assume too much risk in contested waters and cannot be easily replaced when the fleet is depleted by attrition. Smaller ships reduce strategic vulnerability and spread risk to more tolerable levels. The maritime logistics fleet should be replaced with smaller, faster, and more numerous vessels capable of self-defense. Additionally, the ships of the MPF, in static locations such as those based at Guam, could be easily targeted by an adversary such as China with advanced long-range precision guided weapons.⁴⁸

One study proposes re-embarkation of military detachments (MILDETs) aboard the vessels of the CLF to handle certain tasks. Civilian mariners do not have time to train for complex skills such as operating and communicating under emissions control (EMCON), anti-submarine warfare (ASW) defense, and other protective and evasive measures for operations in hostile waters. In the event of a larger conflict, embarked MILDETs may need to be expanded to the broader MSC and even the merchant fleet as more ships have to operate in contested waters.⁴⁹ Additionally, the use of ASW escorts,

⁴⁸ Craig D. Upton. "Lessons Lost: The Protection of American Merchant Shipping in Future Conflicts." *Naval War College Newport*. 2010. and Arthur H. Barber. "Redesign the fleet." *U.S. Naval Institute Proceedings*. 2019; 145(1).

⁴⁹ Kutkiewicz.

nighttime transit through high-risk chokepoints, use of deceptive lighting, and an organic self-defense capability are probably necessary.⁵⁰

A 2018 large-scale combined U.S. and NATO exercise in the North Atlantic, Trident Juncture 2018, exposed other weaknesses in current capabilities. During the course of the exercise, maintenance issues related to long-term storage of existing materiel and lack of spare parts caused many of the supplies and equipment the MPF delivered to troops and Marines to be inoperable and insufficient. Additionally, North Atlantic sea and weather conditions were not often conducive to offloading ships outside of established port facilities. This could prove a critical wartime vulnerability if an adversary like Russia targeted friendly port facilities, impeding U.S. ability to offload heavy equipment, weapons, vehicles, and other supplies. While some issues can eventually be mitigated, the first units responding to a crisis must be prepared for an extended period of limited resupply.⁵¹

The current threat environment

The third category of literature relates to general current and future threats to naval operations and those applicable to U.S. sealift efforts in contested environments. There is a robust body of literature on activities by China to include its strategic goals and the diplomatic, information, military, and economic activities it is undertaking in their pursuit, particularly as relates to the South and East China seas. There is a general consensus that China is pursuing a Mahanian style strategy of sea control.⁵² Whether or

⁵⁰ Upton.

⁵¹ Aric A. Ramsey. "Trident Juncture 2018: Lessons for the North Atlantic." *U.S. Naval Institute Proceedings*. 2019; 145(3).

⁵² Mahan. *The Influence of Sea Power Upon History*.

not this will lead to outright military conflict with the U.S. is a matter of debate.⁵³

However, China is clearly gearing its military modernization and expansion towards countering U.S. capabilities.⁵⁴

The DOD perspective on these issues highlights the impact of sequestration on declining U.S. military readiness, ambivalent public opinion towards China, and rapid Chinese military expansion and modernization. China fields advanced and highly-capable anti-ship cruise missiles (ASCM) and anti-ship ballistic missiles (ASBM), which pose a serious threat to U.S. naval and maritime interests in the Western Pacific.⁵⁵ China has invested heavily in anti-access/area denial (A2AD) capabilities, to include the militarization of small reefs in the South China Sea. These capabilities will not only inhibit the unrestricted operation of U.S. naval vessels in the area but, in the event of war, will pose a major threat to the movement of troops, equipment, and supplies by sea.

One author argues the U.S. Navy has already lost command of the sea, ending the era of uncontested dominance it experienced following the end of the Cold War. This dominance enabled the free flow of international commerce, fueling the global economy and facilitating the unimpeded movement of U.S. military forces around the world. Emerging threats, along with limitations posed by the size of the U.S. fleet, are challenging this U.S. maritime dominance. The U.S. Navy must adjust its strategy and doctrine to prepare once again to gain sea control from its adversaries if and when

⁵³ Toshi Yoshihara and James R. Holmes. *Red Star over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy (2nd Ed.)*. Annapolis: Naval Institute Press. 2018.

⁵⁴ Kamlesh K. Agnihotri. "Naval power dynamics in the western Pacific Ocean: Impact on the maritime situation in East and South China Seas." *Maritime Affairs: Journal of the Nat'l Maritime Foundation of India*. 2013; 9(2):4-19. and Congressional Research Service. *China Naval Modernization: Implications for U.S. Navy Capabilities – Background and Issues for Congress*. by Ronald O'Rourke. RL33153 (Sept. 24, 2019).

⁵⁵ Bert Chapman. "The East China Sea in DOD China military power reports." *Korean Journal of Defense Analysis*. 2017; 29(1):71-93. and CRS. *China Naval Modernization*.

necessary. American plans to keep its forces supplied by sea in this environment must take into account the new reality of a resurgent Russia and expansionist China.⁵⁶ While China's strategy is more Mahanian in its emphasis on sea control, Russia's naval strategy relies primarily on nuclear deterrence, fleet defense, and sea denial. While each of these so-called "great powers" pursue different strategies, both challenge the American ability to transport and supply forces by sea in its adversaries' near-abroad.⁵⁷

One study questions the relevance of maritime trade warfare today, tracing its history from Ancient Greece through the World Wars and up to the present day. The U.S. Navy currently has no offensive or defensive doctrine relating to maritime trade warfare. Tactics might include mine warfare, blockade, cyberwarfare, or kinetic attacks on infrastructure and shipping. While many have argued that modern commercial shipping and the global economy make this concept obsolete, similar arguments have been made in the past, such as before World War I (WWI). The study recommends that the U.S. develop defensive strategies to protect its shipping and account for attrition should future enemies employ these tactics.⁵⁸

Literature conclusions

Several conclusions can be drawn from the literature. First, there is widespread consensus that U.S. sealift capacity has diminished in recent years and is insufficient to meet current needs. Trained mariners are lacking and the fleet is ageing towards the end of its useful service life at the same time the fleet dwindles in size. The shrinking U.S.

⁵⁶ Jennifer Rhiel. "Has the United States lost command of the sea?" *U.S. Naval Institute Proceedings*. 2019; 145(1).

⁵⁷ Alexandr Burilkov and Torsten Geise. "Maritime strategies of rising powers: Developments in China and Russia." *Third World Quarterly*. 2013; 34(6):1037.

⁵⁸ Christopher J. McMahon. "Maritime trade warfare: A strategy for the twenty-first century?" *Naval War College Review*. 2017; 70(3):15-38.

flagged commercial fleet leaves a much smaller pool of ships and mariners upon which to draw in times of crisis. There is also a consensus that the emerging threats, Russia and China chief among them, coupled with the decreasing size and readiness of the U.S. Navy, have fundamentally changed the maritime balance of power of the past several decades. The U.S. can no longer count on default control of the sea or the free flow of shipping such control implies. Policy, doctrine, and technological acquisitions must therefore be adjusted to meet these challenges. More attention needs to be given to this issue and there must be greater study of the likely impacts of operating in a contested environment on U.S. sealift capability. This chapter seeks to help fill this gap.

Methodology

This study focuses on American sealift capacity through the examination of historical case studies. These studies shed light on current U.S. sealift capability relative to the era of renewed great power competition in which the U.S. finds itself. Specifically, this chapter examines the likely effects this competition will have on the U.S. ability to support its naval and forward deployed expeditionary units in a contested maritime environment. While there are several possible cases which could be examined, this chapter will focus on three.

The first case is World War II, which provides the broadest example and represents the worst case (in a conventional sense) of global conflict against multiple enemies in a clash of great powers. WWII involved major, protracted sealift efforts by the U.S. in both the Atlantic and Pacific, major tactical and technological innovations by the Allies, diverse operating environments, and a major effort by the Germans to cut the

trans-Atlantic supply line. The outcome of the Battle of the Atlantic was in doubt throughout the early part of the war. While this case is 75-80 years old, it holds many lessons which are directly applicable to American sealift today.

The second case examines the so-called Tanker War during the 1980s Iran/Iraq War. During that conflict, both Iran and Iraq attacked neutral merchant shipping in the Arabian (Persian) Gulf. In 1987, under Operation Enduring Will, the U.S. Navy escorted reflagged Kuwaiti tankers to ensure their safe passage as they transited the Gulf. Operations during this era, both prior to and during U.S. involvement, provide an opportunity to examine vulnerabilities and issues related to shipping and its protection in a contested maritime environment with modern weapons.

The final case is the British side of the 1982 Falklands War. While it did not involve the U.S. and was a conflict of short duration, the war presents circumstances useful to the research question. First, this conflict was conducted during the age of naval missile combat and was the most significant naval campaign since WWII. Second, the British had to move and supply their forces over great distances with limited or no allied support using only organic sealift capacity. Third, this case illustrates the effects that enemy opposition and attrition can have on sealift during modern conflict.

Case Study – World War II

WWII provides a trove of information relative to sealift and maritime logistics in a contested maritime environment. The American “Arsenal of Democracy” would have had far less impact on the war if the vast quantity of troops, supplies, and war materiel did not make it to the battlefields of Africa, Europe, and the South Pacific or to the

critical allies of Great Britain and the Soviet Union.⁶⁰ British Prime Minister Winston Churchill said after the war, “the only thing that ever really frightened me during the war was the U-boat peril.”⁶¹ The very survival of Britain depended on its transoceanic SLOC with the United States and the ultimate victory of Allied sea power over German U-Boats in the Battle of the Atlantic.

Sealift and maritime logistics were the backbone which enabled Allied strategic objectives. Early in the war, even prior to American entry, the strategic goal was to keep Britain afloat and support her stand against the German onslaught. Once the U.S. entered the war, this effort continued along with a parallel effort to help supply the Soviet Union with resources and war materiel, to aid them in their fight, and to keep the Germans tied down on the Eastern Front. American production and the maritime supply chain also enabled the U.S. to quickly go on the offensive in the Pacific Theatre and launch a late 1942 invasion of North Africa. American sealift fueled, fed, and supplied the combined war effort of all the Allied powers, allowing for combat operations to be carried on relentlessly around the world and at a pace the Axis powers could not hope to match.

Once Britain’s survival was assured, the maritime lifeline kept Allied troops supplied with all of the necessities of modern war. While the Japanese threat to the American SLOC in the Pacific was never as severe as the Battle of the Atlantic, an inadequate number of logistic ships early in the war negatively impacted operations. The lack of enough fast oilers to support the battle groups limited the ability of battleships and fast carriers to support operations early on, with devastating repercussions during the

⁶⁰ Craig L. Symonds. “For Want of a Nail: The Impact of Shipping on Grand Strategy in World War II.” *The Journal of Military History*. 2017; 81(3): 659.

⁶¹ Winston Churchill. *Their Finest Hour*. Cassel: London. 1949: 529.

Guadalcanal campaign.⁶² The U.S., however, conducted an extremely successful interdiction campaign against Japanese shipping, which strangled supplies to deployed troops and the population at home. This illustrates the consequences of failure to protect one's own sea lanes and maritime logistics chain.

Turning to the Battle of the Atlantic, two main factors led to the Allied victory: ensuring a sufficient supply of men and ships to keep the maritime lifeline open throughout the protracted campaign and protecting those supply laden ships during the perilous voyage across the north Atlantic. Accomplishing these tasks allowed the Allies to overcome the initial deficiencies which threatened their ability to sustain the trans-Atlantic supply line. It took time, however, for Allied sealift capability to catch up with demand. After U.S. entry into the war in December 1941, it was not until mid-1943 that the tide turned in the Atlantic.

Men and ships

The U.S. benefitted from several years of lead-time prior to entering WWII. During this time, it was apparent that America would eventually be at war. Since September 1939, war raged in Europe and the Japanese were becoming increasingly powerful, expansionist, and aggressive. In the late 1930s, the U.S. began to reawaken from its post-WWI slumber and take steps to prepare for potential war. This was critical in the maritime arena because of the large amount of money, personnel, facilities, resources, and time necessary for the development and construction of naval and

⁶² James D. Hornfischer. *Neptune's Inferno: The U.S. Navy at Guadalcanal*. Bantam: New York. 2012: 23, 32, 35.
and Salvatore Mercogliano. Interview with CDR Salamander. "Sealift, Logistics & MSC." *Midrats*. Podcast audio, January 28, 2018. <https://cdrsalamander.blogspot.com/2018/01/sealift-logistics-msc-with-salvatore.html>.

merchant ships. Laws were passed to encourage naval construction, including the Two-Ocean Navy Act of 1940,⁶³ which authorized 1.35 million tons of naval construction and an increase in capacity at public and privately-owned shipyards.⁶⁴ This act followed previously-enacted legislation, such as the Vinson-Trammell Act of 1934.⁶⁵ These legislative efforts ensured that American shipbuilding production was on the upswing by the time of Pearl Harbor.⁶⁶

The increased shipbuilding was critical to ensure sufficient capacity to transport supplies required by American allies and forces abroad. It also permitted replacement of losses early in the war due to attrition from Germany's successful efforts to interdict Allied trans-Atlantic shipping. In 1941, the U.S. merchant marine consisted of approximately 1,375 ships and 50,000 mariners.⁶⁷ Victor Davis Hanson notes that, while American entry into the war should have given the Allies an immediate boost, it actually allowed the Germans to freely target U.S. shipping which had previously been considered neutral and thus protected. This led to an increase in attacks which endangered Britain's trans-Atlantic lifeline. Initial failures of the U.S. Navy to adopt adequate defensive measures resulted in catastrophic losses to the merchant fleet, with over six-hundred ships and three-million tons of shipping sunk in the first eight months of the war.⁶⁸ The civilian U.S. Merchant Marine's casualty rate during the war was actually higher than

⁶³ P.L. 86-757, 54 Stat. 779, July 19, 1940.

⁶⁴ Thomas B. Heinrich. "Jack of all Trades: Cramp Shipbuilding, Mixed Production, and the Limits of Flexible Specialization in American Warship Construction, 1940-1945." *Enterprise and Society*. 2010; 11(2): 281.

⁶⁵ P.L. 73-135, 48 Stat. 503, March 27, 1934.

⁶⁶ Richard Busick. "Naval Innovation in the Second World War: Shipbuilding and Anti-Submarine Warfare." *Johns Hopkins University*. AS.470.756.81.SU18. 2018: 2-3.

⁶⁷ American Merchant Marine at War. "American Merchant Marine Heroes and their Gallant Ships in World War II." http://www.usmm.org/men_ships.html. (accessed March 31, 2019).

⁶⁸ Victor Davis Hanson. *The Second World Wars*. Basic Books: New York. 2017: 173..

any branch of the U.S. military, with a loss of 9,500 men killed from a total force of 243,000, representing a 3.9 percent fatality rate.⁶⁹

While these losses were staggering, American manpower and industrial might began to kick into high gear, replacing losses at a faster rate than the Germans could sink ships. The Merchant Marine aggressively recruited civilian volunteers, expanding its candidate pool by including those who wanted to serve but were otherwise ineligible for the military.⁷⁰ Recruits included men and boys between 16 and 78 years of age as well as many who were medically disqualified from military service.

Likewise, new ship construction skyrocketed with ships coming down the ways almost faster than they could be crewed by trained mariners. Henry Kaiser led the way with the mass-production of Liberty cargo ships and their larger cousins, the Victory ships. These ships had a capacity of 10,800 and 10,850 deadweight tonnage (dwt), respectively.⁷¹ Liberty ships were the most widely produced class of ships during the war, with 2,699 ships produced in 16 yards. Production efficiency was maximized through standardization. Workers employed an assembly line approach to move prefabricated sections of the ships through the shipyard as they were built, to the ways for launch, and then to docks for final outfitting.⁷² It took time, however, for this efficiency to be fully realized and it was not until 1943 that production reached full-steam.

⁶⁹ Ed Offley. *Turning the Tide: How a Small Band of Allied Sailors Defeated the U-Boats and Won the Battle of the Atlantic*. Basic Books: New York. 2011: xxiv.

⁷⁰ Smithsonian National Museum of American History. "On the Water – Answering the Call, 1917-1945: Merchant Seamen." https://americanhistory.si.edu/onthewater/exhibition/6_3.html. (accessed March 31, 2019).

⁷¹ National Park Service. "Liberty Ships and Victory Ships, America's Lifeline in War." https://www.nps.gov/nr/twhp/wwwlps/lessons/116liberty_victory_ships/116liberty_victory_ships.htm. (accessed April 3, 2019).

⁷² Peter Thompson. "How Much Did the Liberty Shipbuilders Learn? New Evidence for an Old Case Study." *Journal of Political Economy*. 2001; 109(1): 105-106.

The shipbuilding industry grew from employing approximately 6,000 workers before the war to over 1.7 million workers in 1944. Production increased from 16 merchant ships delivered in the four years ending in 1936 to over 4,000 delivered in the four years ending in 1944.⁷³ Earlier in the war, production was slower since ships were often built at the same time the shipyards and infrastructure were built around them. However, once this infrastructure was in place, the rate of production increased.⁷⁴ Kaiser's yards radically increased efficiency, driving down average production time for an individual Liberty ship from 230 days to about 42 days.⁷⁵ The Germans simply could not keep up with this rate of production.

Defensive and offensive measures

As critical as U.S. ship production was, the Allies needed to stem the tide of shipping lost to U-boat predation. When America entered the war, the U.S. Navy was woefully unprepared to confront this threat. Conversely, the U-boats of the *Kriegsmarine* were prepared and immediately set about attacking previously off-limits American merchant vessels. It is likely that Hitler declared war on the U.S. following the Japanese attack on Pearl Harbor in large part because it would allow him to target the critical flow of supplies to Britain while the U.S. Navy was tied-up fighting the Japanese in the Pacific.⁷⁶

Initially, the German U-boat offensive was extremely successful. The U.S. Navy had sent most of its fleet to the Pacific, leaving scant resources to protect trans-Atlantic

⁷³ James M. Knox. "Private Enterprise in Shipbuilding." *Harvard Business Review*. Autumn 1945; 24(1): 79.

⁷⁴ Ibid. 112.

⁷⁵ Victor Margolin. "The United States in World War II: Scientists, Engineers, Designers." *Design Issues*. 2013; 29(1):19.

⁷⁶ Hanson. 26-17.

shipping. American coastal shipping traffic was particularly vulnerable as U.S. ships did not travel in convoys. Nighttime travel close to shore left ships backlit by coastal lighting, making them easy targets for German U-boats. Many were sunk within sight of land and witnesses on shore.⁷⁷ Despite the dramatic impact convoys had on protecting shipping and curbing losses to U-boats during WWI,⁷⁸ the Navy remained reluctant to fully institute them. Heavy losses throughout early 1942 caused Admiral Ernest J. King, Chief of Naval Operations, to reconsider and a full system of escorted convoys was instituted along the coast and Western Atlantic. King later commented, “convoy is not just one way to handle the submarine menace, it is the only way.”⁷⁹

A system was developed to convoy merchant traffic across the Atlantic, escorted by naval and coast guard ships and supported by shore based ASW air patrols. Close cooperation between American, British, and Canadian forces made this possible despite friction and differing priorities between military and political leadership of the different countries. Cooperation allowed for a division of effort, areas of responsibility, and close coordination, which maximized the effectiveness of limited resources.⁸⁰

Massive industrial output and advances in technology by the United States and Britain fed an evolution of tactics for protecting shipping throughout the war. Escorting convoys was resource intensive. Each convoy required an average of 7.5 escorts, making the number of available surface combatants key to the success of the convoy system.⁸¹

⁷⁷ Joseph B. Bilby and Harry Ziegler. *A History of Submarine Warfare Along the Jersey Shore*. The History Press: Charleston. 2016:55-59, 75.

⁷⁸ Stephen Budiansky. *Blackett's War: The Men Who Defeated the Nazi U-Boats and Brought Science to the Art of Warfare*. Vintage Books: New York. 2013: 34-15.

⁷⁹ John Berosky. “Of Convoys and Merchants: The Battle of the Atlantic and the Tanker War.” *U.S. Naval Institute Blog*. March 28, 2019. <https://blog.usni.org/posts/2019/03/28/of-convoys-and-merchants-the-battle-of-the-atlantic-and-the-tanker-war>.

⁸⁰ Offley. 50-51.

⁸¹ Berosky.

Purpose built, relatively small, and inexpensive destroyer escorts, corvettes, and escort carriers were game-changing assets made possible by the heavy investment in ship-building.⁸² The arrival of very long-range B-24 Liberator bombers in mid-1943, which conducted airborne reconnaissance and ASW missions, allowed the Allies to close the Greenland Air Gap. The Gap constituted a stretch of roughly 800 miles across the north-Atlantic that was previously beyond the range of shore-based patrol craft and where convoys were particularly vulnerable to U-boat “wolf pack” attacks. Convoys regularly suffered heavy losses transiting this dangerous area through mid-1943.⁸³

Defensive measures aboard merchant ships included the institution of complete nighttime blackouts and the embarkation of Naval Armed Guard personnel and weapons. The Armed Guard typically consisted of a U.S. Navy officer and approximately 27 enlisted sailors who, in addition to communications gear, manned a 5” naval gun, a 3” anti-aircraft gun, and eight 20mm machine guns. The Navy ultimately equipped 6,236 merchant ships (U.S. flagged, U.S. owned and foreign flagged, and foreign owned and flagged vessels). Of these ships, 733 were ultimately sunk and the armed guard lost 1,810 sailors. While data on enemy submarines sunk could not be found, the Armed Guard is credited with destroying 477 enemy aircraft, 66 probably destroyed, and 315 assists. Many of these successes occurred in the Pacific. According to the U.S. Navy, despite a cost of over \$2 billion, “the Armed Guard Service paid such high dividends in ships and cargo saved that its cost may be termed nominal.”⁸⁴

⁸² Hanson. 174-175.

⁸³ Offley. 46, 184.

⁸⁴ Naval History and Heritage Command. “Naval Armed Guard Service in World War II.” June 23, 2016. <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/n/naval-armed-guard-service-in-world-war-ii.html>.

Science and technology

The division of responsibility and pooling of resources were not the only benefits the U.S. derived from its close cooperation with Great Britain. The British were on the forefront of scientific and technological advances, particularly as they related to the Battle of the Atlantic. Britain's Operational Research Section was responsible for several of these breakthroughs.

One such innovation was related to the convoy system. A scientific approach examined the likelihood of a convoy being spotted and the number of ships likely to be sunk based on convoy size and escort ratio. They discovered that large convoys (up to 78 or more ships) required a lower ratio of escorts to afford the same degree of protection, were no more likely to be spotted, and were likely to lose the same number of ships (0.9) per convoy as a smaller one. One of the reasons was that a large convoy was not much easier to spot in the vast ocean than a single ship. Since U-boats carried only a limited number of torpedoes and had to get relatively close to their targets to attack (the effective range of the German G7e torpedo was 8,200 yards, typical for torpedoes of the era), they were vulnerable to detection and counterattack from escort vessels, especially those equipped with radar.⁸⁵ These revelations changed the composition of convoys and reduced the backlog of ships waiting for escorts across the Atlantic. It also freed up destroyers and other ships for equally important tasks, including hunting U-boats.⁸⁶

Another breakthrough was the development of centimeter wave radar. This radar was very effective in locating submarines since it could spot small objects, was small

⁸⁵ NavWeaps. "Torpedoes of Germany: World War II."
http://www.navweaps.com/Weapons/WTGER_WWII.php. (accessed April 4, 2019).

⁸⁶ Budiansky. 86-87, 221-226.

enough to be mounted on aircraft, and was not detectable to the U-boats' Metox receiver. It gave Allied ships and aircraft a significant edge in hunting U-boats, detecting them at extended range while they were surfaced, especially at night and in poor weather.⁸⁷

The successful cracking of the German Enigma code by the British proved to be one of the greatest triumphs. This important development allowed for the interception and decryption of messages sent to and from U-boats and their headquarters, the *Befehlshaber der U-Boote*. German wolf packs relied on the security of the German naval code because they required extensive coordination and radio communication. This vulnerability was exploited by Allied intelligence to protect convoys by diverting them around known wolf packs. Eventually it also allowed Allied aircraft and naval units to aggressively target U-boats who gave away their location making radio transmissions.⁸⁸

Allied tactics evolved with the deployment of an increased number of naval ships and patrol aircraft, technological innovations, and improved intelligence. U-boats began the war with the advantage, forcing the U.S. and its Allies to focus on the close defense of convoys through escorts and airborne patrols. The availability of additional resources and improved technology enabled a shift towards offensive tactics which pursued U-boats wherever they were found, causing heavy German losses and largely diminishing the effectiveness of the U-boat campaign after mid-1943.⁸⁹

Forward staging

One final area which should not be overlooked with regards to the successful U.S. maritime logistics was the availability of forward staging areas, to include port facilities.

⁸⁷ Ibid. 127, 210-211.

⁸⁸ Hanson. 172.

⁸⁹ Offley. 367-369, 382.

These allowed for the off-loading and staging of both personnel and equipment before further deployment in support of combat operations. Great Britain served as a major staging area throughout the war and it possessed excellent port facilities. This allowed the build-up of men and materiel during the two-year period prior to the Normandy invasion. As American forces battled their way across Africa and Europe, they seized additional port facilities closer to their operational areas. In support of D-Day, artificial Mulberry harbors were built and towed into position because of the lack of organic port facilities needed to support the invasion.

Such staging areas were not available earlier in the war. During Operation Torch in November 1942, the U.S. and Britain invaded North Africa. The U.S. invasion fleet was launched from Virginia and made the risky Atlantic crossing, traveling directly to the landing sites in Morocco. With no forward staging area for men and equipment, and with the active U-boat threat, there was a serious risk the mission could be compromised before the troops hit the beaches. As the first major Anglo-American operation in the Mediterranean theatre, it was critical that the invasion fleet make it across the ocean without losses to enemy aircraft or submarines. Fortunately, it managed to achieve success on both counts.⁹⁰

In the Pacific, the U.S. had staging areas in Hawaii and Australia and it seized additional port facilities as its forces island-hopped across the Pacific towards Japan. Such forward staging areas were not always available, however, and it was the job of the U.S. merchant fleet and its naval escorts to get the men and cargo to the combat theatre. These staging areas also allowed large ships to bring bulk supplies from the U.S.

⁹⁰ Walter R. Borneman. *The Admirals: Nimitz, Halsey, Leahy, and King – The Five-Star Admirals Who Won the War at Sea*. Back Bay Books: New York. 2012: 275-278.

mainland and stockpile supplies which were later divided as needed for smaller shipments to their destinations. They also allowed for the air-transport to locations that were not as easily supplied by sea.

American interdiction of Japanese shipping

The American campaign to target Japanese merchant shipping in the Pacific merits brief mention due to its significance to the overall Allied victory in the Pacific. Japan relied heavily on her merchant fleet for resources to supply both the homeland and the industrial-military machine which supported her expeditionary operations throughout the Pacific. These operations began in the late 1930s and continued through the early years of the war, involving Japanese invasion and occupation of territory and islands throughout east Asia and the Pacific.

Japanese naval doctrine included no provision for either the interdiction of enemy merchant shipping or the defense of its own SLOC and maritime logistics chain. As a result, the U.S. did not face the same threat to shipping as it did in the Atlantic. Meanwhile, U.S. naval and military forces, particularly U.S. submarines, waged an extremely effective campaign to target Japanese sealift, destroying approximately 8.1 million tons of shipping.⁹¹ This devastated Japan, strangling its access to oil which was essential to naval and air operations, imports for the homeland, and supplies and reinforcements to sustain troops who were ultimately abandoned on islands across the Pacific.⁹² In contrast to the Battle of the Atlantic, this campaign illustrates the catastrophic effect the inability to maintain one's sealift capability and maritime logistics can have on the ability to effectively wage war abroad.

⁹¹ McMahon. 20.

⁹² Hanson. 188-190.

Summary and lessons learned

Several lessons can be gleaned from the study of WWII. Most importantly, sealift capability is critical to successfully waging war overseas and supporting allies in or near the war zone. An initial deficit of sealift capacity can be overcome if the resources required to build this capacity are prioritized. Given the long lead time required to develop critical ship-building capacity and expand the fleet, such efforts must be started prior to the outbreak of war. Once war has begun, ship-board defensive measures increase the survivability of logistics ships and convoys are essential to protect merchant ships from enemy air and naval threats, particularly submarines. Offensive tactics instituted to protect shipping may ultimately be the best defense, however adequate naval resources are necessary for the offensive and defensive operations required to secure the sea lanes. Forward staging areas enable efficient logistics and support to combat operations. Since naval warfare is technology-dependent, scientific and technological advances should be fully leveraged and ever-important cooperation with Allies serves as a force-multiplier. Last, a failure to protect sealift capacity and SLOC has a debilitating effect on the ability to prosecute war abroad and on national security at home.

Case Study – The Tanker War

The Tanker War grew out of the 1980-1988 Iran-Iraq War. Both Iraq and Iran border the strategically important Arabian (Persian) Gulf and its busy commercial sea lanes, through which flows much of the world's supply of crude oil. Iraq has a short coastline on the Gulf at its northern end, bordered by Kuwait to its west. Iran's coastline

runs from the border with Iraq, down the entirety of the eastern shore of the Gulf, past the strategic chokepoint at the Strait of Hormuz, and out to the Gulf of Oman.

As the war ground into a stalemate, Iraq began attacking tankers carrying Iranian oil in an effort to starve Iranian finances. In 1982, Iraqi aircraft attacked 21 tankers, most of which were neutral vessels. While Iran threatened retaliation, not until 1984 did it begin attacking tankers carrying Iraqi oil, including Saudi and Kuwaiti ships. These attacks were mostly conducted using small, fast-attack craft armed with machine guns and rocket propelled grenades. That same year, Iraqi aircraft attacked 53 neutral tankers in the Gulf it believed to be carrying Iranian oil.⁹³ During 1984 and the first four months of 1985, 17 tankers were so severely damaged they had to be scrapped or sold for scrap.⁹⁴ Iranian Navy frigates began launching missile attacks on tankers in 1986 and Iranian Revolutionary Guard Corps fast-attack boats joined the fray in 1987.⁹⁵ The Iranians also installed Silkworm anti-ship missiles along the coast near both the Strait of Hormuz and the Northern Gulf near Kuwait.⁹⁶ This campaign was the largest to be conducted against commercial shipping since WWII. The tonnage damaged by 1986 equaled approximately 20 percent of Allied merchant shipping lost during the war.⁹⁷

Based on the continued attacks on its tankers, in March 1987, Kuwait asked the U.S. for naval escorts through the Gulf to facilitate their safe passage. After some discussion, the Kuwaitis agreed to reflag their tankers under the U.S. flag and the U.S.

⁹³ Craig L. Symonds. *Decision at Sea: Five Naval Battles that Shaped American History*. Oxford: New York. 2005: 278-279.

⁹⁴ "Tanker Casualty List Lengthens in Iran/Iraq War." *Oil & Gas Journal*. June 17, 1985; Vol. 83. 68.

⁹⁵ Lee Allen Zatarain. *America's First Clash with Iran: The Tanker War, 1987-1988*. Casemate: Philadelphia. 2005: 27-28.

⁹⁶ "Iran, Iraq escalate tanker war in Persian Gulf." *Oil & Gas Journal*. July 6, 1987; Vol 85. 17.

⁹⁷ Wayne P. Hughes and Robert P. Girrier. *Fleet Tactics and Naval Operations (3rd Ed.)*. Naval Institute Press: Annapolis. 2018:145.

agreed to escort them from the Gulf of Oman, through the Strait of Hormuz, into the Arabian Gulf, and on to Kuwait, a distance of over 700 nautical miles.⁹⁸ The first convoy occurred in July 1987, with a U.S. Navy cruiser, destroyer, and frigate escorting two Kuwaiti tankers. During the very first convoy, prior to reaching Kuwait, one of the tankers under escort, the 1,200-foot-long *Bridgeton* (401,000 dwt), struck an Iranian mine. The explosion caused a large hole in the side of the tanker. Fortunately, with only 4 of its 31 compartments flooded, the damage was contained, and the ship was able to continue. The danger of additional mines and their potential to sink the smaller warships caused the escorts to fall in-line behind the *Bridgeton*, using it as a “mine sweeper” for the remainder of the journey.⁹⁹ The Navy had been unprepared to encounter mines, and as a result had to rush helicopters and ships capable of clearing mines to the Gulf, via the forward staging area at Diego Garcia.¹⁰⁰

The U.S. Navy ultimately escorted over 270 ships in 136 convoys. The *Bridgeton* was the only escorted ship to suffer damage from enemy action. Once involved, U.S. Navy was largely successful in securing the sea lanes for neutral shipping transiting the war zone.¹⁰¹ Overall, during the Tanker War over 400 ships were struck by missiles from either Iraq or Iran, with 60 percent of the victims being tankers. Approximately 25 percent of all ships hit were destroyed.¹⁰²

Unlike during WWII, the entire maritime component of the Iran-Iraq war took place within the littoral waters of the Arabian Gulf. Enemy submarines played no role in

⁹⁸ Symonds. 280-283.

⁹⁹ Zatarain. 63-70.

¹⁰⁰ Symonds. 287.

¹⁰¹ Symonds. 288.

¹⁰² Hughes and Girrier. 145.

the conflict and neither Iraq nor Iran were capable of conducting operations far from shore. The threat comprised older weapons such as fast-attack boats, machine guns, and mines as well as modern weapons, including jet aircraft and air and surface launched anti-ship missiles. The geography of the Gulf meant that shipping was canalized into shipping lanes deep enough to handle large, deep-draft vessels. These shipping lanes are located in close proximity to Iran, and all vessels into or out of the Gulf must transit the Strait of Hormuz in narrow channels, much of the time within eyesight of the Iranian coast.

Also, unlike the Battle of the Atlantic, the convoys consisted of only one or a handful of escorted vessels at a time. The first convoy of two tankers was escorted by three warships. A significant amount of naval resources was required to handle the escorts given the small size of the convoys. Those resources included an aircraft carrier battle group in the Gulf of Oman which provided air cover, airborne early warning (AEW), and quick reaction capabilities.¹⁰³ Additional resources were the mine clearance assets deployed after the *Bridgeton* incident. Each of these assets were deployed to ensure safe passage of merchant shipping over a fairly limited distance in comparison to the trans-Atlantic convoys or moving of men and cargo across the Pacific during World War II.

Since the end of WWII, the size of merchant ships grew dramatically. Liberty and Victory ships carried approximately 10,800 dwt, while smaller modern ships might carry 40,000 dwt, with many up to the 100, 200, or 300,000 dwt category.¹⁰⁴ The *Bridgeton* was one of the largest vessels in the world, coming in at 401,000 dwt. The

¹⁰³ Zatarain. 65.

¹⁰⁴ "Tanker Casualty List."

large size of these ships, along with modern ship construction and compartmentalization, makes them harder to sink than smaller vessels. Unrefined crude oil does not generally explode and actually serves to deaden and contain the explosion of a mine or missile-borne warhead. Empty tankers filled their holds with ballast water or diesel exhaust to deplete oxygen and prevent conditions favorable for a fire within the confined spaces. As a result, modern tankers were very hard to sink, their greatest vulnerability coming from a strike igniting the ship's fuel supply. Tanker ships also boasted thick and robustly built hulls, which provided a significant measure of protection and had the result of limiting damage from incoming missiles.

Additionally, the targeting characteristics and flight profile of the Exocet air-to-surface missiles used by Iraq at the time often caused them to strike a ship's superstructure rather than the hull. This resulted in less damage than a shot taken at the waterline. The Iranians developed countermeasures and decoys which were successful in drawing Iraqi Exocet missiles off target. Gasoline tankers were much more vulnerable if hit due to the more volatile nature of gasoline. Dry cargo ships, though significantly smaller, were not as vulnerable to single missile strikes despite their smaller size. In one instance, an Indian cargo ship carrying produce was hit by an air-to-surface missile but was quickly repaired and put back into service.¹⁰⁵

Two incidents during the war illustrate the hazards associated with modern naval combat. In May 1987, the U.S. Navy frigate *USS Stark* was struck by two Iraqi air launched Exocet missiles. Despite adequate AEW, the *Stark* did not take defensive measures in time to avoid being struck by the missiles. Thirty-seven sailors were killed

¹⁰⁵ Zatarain. 28-29.

and only the heroic efforts of the crew prevented the ship's sinking. The Iraqis claimed they had misidentified the ship as a hostile target.¹⁰⁶ In July 1988, while operating in the Gulf, the cruiser *USS Vincennes* became engaged with multiple Iranian fast-attack craft. During this time, AEW radar picked up an inbound aircraft coming from the area of Iran's airbase at Bandar Abbas. The *Vincennes* made several unsuccessful attempts by radio to contact the unidentified aircraft, which was heading directly for the ship. A variety of factors and missteps resulted in the *Vincennes* classifying the aircraft as hostile and launching a surface-to-air missile, shooting it down. Afterwards, it was learned that the aircraft was Iran Airlines flight 655, a passenger airliner carrying 290 persons aboard. There were no survivors.¹⁰⁷

Summary and lessons learned

This examination of the Tanker War yields several lessons relative to sealift and maritime logistics in the modern contested environment. Modern combat at sea is fast paced, conducted over extended distances, and often occurs in a littoral environment. It can be heavily affected by the terrain and geography in the combat theatre. Operations during the Tanker War were conducted in the midst of busy sea lanes and commercial air traffic routes. Modern ship and aircraft mounted sensors allow detection of ships and aircraft beyond visual range, but identifying friend from foe, or determining hostile intent in the midst of crowded sea and air traffic, can be difficult. Missiles can be launched from 20 or more miles away and travel at high speeds (even further and faster today), minimizing the time available for personnel to make decisions. Errors by naval personnel can be quickly compounded in this compressed timeframe and result in the ship being

¹⁰⁶ Ibid. 7-25.

¹⁰⁷ Symonds. 314-317.

sunk or in catastrophic targeting errors. While this creates new hazards for friendly forces and maritime logistics, the enemy will face the same issues, potentially providing opportunities for defensive measures which can mask the identity or location of merchant ships supporting U.S. operations. The new evolution in naval combat will certainly affect the safe passage of sealift in the modern contested maritime environment.

Case Study – The Falklands War

The final case study examines the 1982 British campaign in the Falkland Islands. While neither U.S. sealift nor naval forces participated, this case is illustrative of the challenges and importance of sealift to modern combat operations in distant theatres. British sealift was critical to their success in the Falklands campaign, 8,000 miles from home.¹⁰⁸ This war involved the largest and most sustained naval campaign since WWII.¹⁰⁹ The campaign involved modern naval combat, with both British naval and merchant ships damaged and sunk by enemy action. Like the U.S., the British faced the problem of a declining merchant marine. Additionally, their military sealift was organized similar to the U.S., with civilian crews sailing auxiliary support ships or other British flagged merchant ships pressed into service.¹¹⁰ The study of this campaign therefore proves useful in the analysis American sealift today. The U.S. Navy published

¹⁰⁸ Roger Villar. *Merchant Ships at War: The Falklands Experience*. Naval Institute Press: Annapolis. 1984: 7.

¹⁰⁹ Harry D. Train II. "An Analysis of the Falkland/Malvinas Islands Campaign." *Naval War College Review*. Winter 1988; 41(1): 40.

¹¹⁰ John Johnson-Allen. *They Couldn't Have Done It Without Us*. Seafarer Books: London. 2011: xv-xvii.

an official report on the campaign and its lessons learned in 1983, in which it agreed with the value such study could provide for the U.S.¹¹¹

The war began on April 2, 1982, when Argentina invaded and captured the Falkland Islands, a British colonial possession, whose ownership had been contested since the British took possession of them nearly a century and a half before.¹¹² The British government was determined to retake the islands and, rather than negotiate as the Argentinians had anticipated, Britain set about deploying an invasion force. This required a massive logistics effort given the distance involved and the size of the force needed. The Royal Navy required the support of tankers, supply ships, hospital ships, troop ships, and amphibious ships and immediately took steps to requisition civilian vessels known as STUFT, or Ships Taken Up from Trade.¹¹³

Fifty-two STUFT ships from thirty-three different companies were requisitioned by the Royal Navy. Twenty-two Royal Fleet Auxiliary ships also supported the operation. The STUFT ships were crewed by British civilians and included tankers, bulk cargo ships, roll-on/roll-off ships, and cruise ships. Many of the ships were quickly modified for different purposes including installation of defensive weapons, equipment to replenish other vessels underway, and the ability to launch and land helicopters or Sea Harrier jump-jets.¹¹⁴ Ascension Island, located approximately half-way between Britain and the Falkland Islands was selected as an intermediate staging area. More than 5,800 personnel and 6,600 tons of supplies were airlifted from Britain to Ascension, where they

¹¹¹ Department of the Navy. *The Falklands War, 1982: Official U.S. Navy Report on Lessons Learned and Military Analysis of the British Execution of the Recapture of the Falkland Islands, Operation Corporate*. Department of Defense: Washington D.C. 1983: 4.

¹¹² Train. 36-38.

¹¹³ Max Hastings and Simon Jenkins. *The Battle for the Falklands*. W.W. Norton & Co.: New York. 1983: 74-82.

¹¹⁴ Johnson-Allen. 20-25.

could then be loaded on ships to support the Falklands operation.¹¹⁵ Despite the availability of this staging area, the extended distance involved created difficulties for British forces with logistics and operational support.¹¹⁶

During the operation to retake the islands, there were twenty-three instances of damage to British ships from enemy air attack and six ships sunk: two destroyers, two frigates, a landing ship, and a merchant ship. The British in turn inflicted heavy losses on the Argentinian Navy and Air Force, sinking a cruiser and a submarine.¹¹⁷ The primary threat to British surface forces, including the civilian STUFT ships, was enemy air attack, exacerbated by the flotilla's lack of an effective AEW and air-intercept capability.¹¹⁸ The merchant ship *Atlantic Conveyor* was sunk on May 25 when two Argentinian Super Etendard fighters attacked, launching two Exocet anti-ship missiles from approximately 30 miles away. The escorting warships activated their anti-aircraft and missile defenses, including the firing of chaff radar decoys. At least one missile, which had been targeting the frigate *HMS Ambuscade*, shifted course upon launch of the decoys and locked onto the *Atlantic Conveyor*. The missile struck her on the port side below the superstructure, causing a major fire despite the warhead's failure to detonate. The ship quickly sank, taking with her ten helicopters which were crucial to operations ashore.¹¹⁹ The loss of these helicopters caused the Commando Brigade, which was set to employ them and already engaged with the enemy, to completely change plans, resulting in a lengthy foot march across rugged terrain instead of being transported by helicopter.¹²⁰

¹¹⁵ *Official U.S. Navy Report*. 36.

¹¹⁶ *Ibid.* 9.

¹¹⁷ Hughes and Girrier. 151. and Train. 40.

¹¹⁸ Thomas Moorer. "In the Wake of the Falklands Battle." *Strategic Review*. 1982; 10(3): 25-26.

¹¹⁹ Hastings and Jenkins. 227. and Hughes and Girrier. 148.

¹²⁰ Hastings and Jenkins. 262.

Despite the lack of a successful attack by Argentinian submarines, their presence had a major impact on British operations. The Argentinians only possessed a handful of diesel-electric submarines, not all of which were operational. The Royal Navy was extremely concerned, however, with the damage these submarines could cause to the naval and merchant vessels of the flotilla.¹²¹ To combat this threat, Royal Navy diverted a significant number of surface, sub-surface, and air assets to hunt one Argentinian submarine which was operating near the fleet. This task force expended the Navy's entire supply of anti-submarine munitions without effect in their efforts to sink the submarine.¹²²

The Falklands campaign brought to light several other issues related to maritime logistics. While the STUFT vessels were quickly brought into service, they were not always ideally suited to support the operation. First, they lacked organic defensive systems including AEW sensors, electronic countermeasures (ECM), and anti-aircraft, anti-surface and ASW defensive weapons. While some defensive systems were "bolted-on" immediately prior to sailing for the South Atlantic, the systems were not robust nor were the civilian crews trained in their use. Additionally, some of the STUFT ships, including passenger ships such as the *Queen Elizabeth II*, were used to support amphibious operations. These ships were ill-suited for the requirements of amphibious operations. Although they were easily loaded with personnel and equipment in British ports, lack of adequate dock facilities and ramps in the area of operation, along with poor

¹²¹ Train. 40.

¹²² James R. Holmes. "Explained: Why Taiwan Needs New Submarines to Deter China." *The National Interest*. April 7, 2019. <https://nationalinterest.org/blog/buzz/explained-why-taiwan-needs-new-submarines-deter-china-51227>. (accessed April 8, 2019).

sea and weather conditions, made unloading quite inefficient in comparison with purpose-built ships.¹²³

Finally, civilian vessels transporting war materiel are highly susceptible to fire and damage when struck by enemy missiles. Much war related cargo consists of hazardous and combustible material such as fuel and ammunition. When the *Atlantic Conveyor* was struck, even though the missile did not detonate, it still caused a major fire which ultimately doomed the ship. Merchant ships are crewed by far fewer personnel than naval warships. Navy sailors are well trained in damage control and have assigned damage control stations in the event of a fire, explosion, or other damage. Civilian mariners lack the degree of training given to their navy counterparts and the number of personnel to effectively contain damage and save the ship. As such, these ships are much more likely to suffer catastrophic damage and sink from a missile, mine, or torpedo strike than a comparable naval ship.¹²⁴

Summary and lessons learned

The British Falkland Island campaign provides several lessons as pertains to sealift in a contested environment. Campaigns conducted an extended distance from home are inherently difficult. When pressing merchant ships into service in support of military operations, the lack of adequate port facilities and/or heavy seas and poor weather can negatively impact their ability to efficiently support operations and off-load cargo. The availability of forward staging areas, out of range of enemy attack, can help mitigate this difficulty. These merchant ships have inherent limitations in comparison with purpose-built military vessels and are vulnerable to enemy stand-off air attack if not

¹²³ *Official U.S. Navy Report*. 30-31, 35-36.

¹²⁴ *Ibid.* 42.

protected by AEW systems, air intercept, ECM, and other defensive systems. They are more susceptible to damage based on the nature of their cargo and lack of effective damage control capability. The loss of even one ship can degrade the supported operations, especially when sealift ships are limited in number. However, despite the drawbacks, civilian merchant shipping can provide essential support and supplementation to limited military resources when conducting expeditionary operations in support of forces operating far from home, even in a contested environment.

Analysis

Each of the three case studies reviewed provide important lessons and considerations to be applied to the research question: Is American sealift capacity sufficient for the challenges of great power competition? Does the U.S. possess capacity to achieve these goals in the context of a major war and a contested maritime environment? The case studies cover a broad spectrum of operations across time, region, adversaries, technology, and strategic objectives. Before diving into an analysis of the case studies, however, a brief look back at the conclusions of the current literature is in order.

As a starting point, there is a consensus in the literature that current sealift capacity is insufficient to meet current and future U.S. national security needs. This deficiency exists even without the problems that a contested maritime environment would present to the ability of the U.S. to meet the logistical needs of its forces operating abroad. There is a shortage of both available ships and trained civilian mariners to operate them, especially in the event a surge of sealift capacity is required. While there is

some debate about the extent of this deficiency, a recent major exercise, Turbo Activation 19-Plus, was conducted to test the ability of MSC and MARAD's RRF fleet to get underway on short notice as required by law and produced alarming results. An official report on the results indicated that despite a goal of 85% of the ships available and ready, the cumulative fleet success rate was only 40.7%.¹²⁵ Current efforts to mitigate the sealift deficiencies have so far allowed the U.S. to continue supporting current operations with minimal disruptions, however the results of the exercise illustrate the risk in the event of a crisis requiring surge forces. The U.S. Government Accountability Office agrees that steps need to be taken to prevent a further decline in capability, particularly among the RRF.¹²⁶ Navy leaders also warn that capacity is insufficient to support the demands of a major war in the Pacific and that the U.S. is facing a potential collapse in sealift capacity in the mid-2020s if the fleet is not recapitalized.¹²⁷

There is also broad agreement that the emergence of China and resurgence of Russia as naval threats have altered the maritime threat picture. Combined with the Navy's diminished resources and number of ships over recent decades, the U.S. can no longer assume command of the sea by default. The questions remain, what are the potential effects of these new threats and how will opposed operations affect American

¹²⁵ This exercise was the largest activation of U.S. sealift ships since Operation Iraqi Freedom in 2003. Turbo Activation 19-Plus involved the activation of 61 ships, including 15 MSC ships and 46 ships of the MARAD RRF. Salvatore R. Mercogliano. "Turbo Activation – A sealift Surge, or just a Trickle?" *gCaptain*. Dec. 31, 2019. <https://gcaptain.com/turbo-activation-19-plus-a-sealift-surge-or-just-a-trickle/>.

¹²⁶ John Pendleton. "Actions needed to maintain viable surge sealift and combat logistics fleets." *GAO Reports*. 2017:1.

¹²⁷ David B. Larter. "Despite rising awareness of critical US sealift shortfalls, solutions are elusive." *DefenseNews*. Oct. 13, 2019. <https://www.defensenews.com/naval/2019/10/14/despite-rising-awareness-of-critical-us-sealift-shortfalls-solutions-are-elusive/>. and David B. Larter. "Facing a sealift capacity collapse, the Navy seeks strategy for new auxiliary ships." *DefenseNews*. Jan. 16, 2019. <https://www.defensenews.com/naval/2019/01/16/facing-a-sealift-capacity-collapse-the-navy-hones-in-on-a-strategy-for-new-auxiliary-ships/>.

sealift capability? Sal Mercogliano, an adjunct professor at the U.S. Merchant Marine Academy writes, “Not since the First World War has the United States faced a situation where its ability to be an expeditionary force may be in question due to its lack of a viable merchant marine to maintain its seaborne logistic bridge and the nation’s position as a major maritime power may be in doubt.”¹²⁸

Each of the cases studied demonstrated that merchant ships and other maritime logistics vessels are vulnerable to enemy attack. Historically, these attacks have come from submarines, surface ships, mines, air attack, missiles, and small fast attack craft. The development of modern missile technology allows attacks to be conducted from beyond visual range and at a very fast speed. During WWII, enemy submarines had to be within roughly 10,000 yards and aircraft had to come much closer. Modern torpedoes have a much longer range and advanced guidance systems which make them a much greater threat. Today, land-based batteries (included mobile truck-mounted launchers), aircraft, ships, or submarines can launch guided missiles at well over twenty miles away or more. The development of modern long range ASCMs and ASBMs extend these ranges into the hundreds, if not thousands, of miles. In the modern environment, especially in littoral areas, merchant ships are extremely vulnerable and it is all but assured that enemy action will take its toll in ships sunk and cargo lost in the event of a high-end conflict.

In 1983, the U.S. Navy recognized this reality in a report that evaluated lessons learned from the British campaign in the Falklands. One conclusion merits quoting in its entirety:

¹²⁸ Mercogliano. “Turbo Activation.”

The magnitude of the operation required from the merchant fleet to support an operation the size of the Falklands underlines the fact that, while the task of mobilizing sufficient strategic sealift for adequate conventional deterrence is difficult enough, it would be impossible to sustain a conflict given the level of attrition suffered from submarine warfare in World War II. Allied naval forces can only defend the sea lanes by ensuring a forward offensive defense against submarines.¹²⁹

Whether attrition is caused by submarines, mines, surface ships, aircraft, missiles, or fast-attack craft, the effect is the same. Both the Tanker War and the Falklands War illustrate the danger posed by enemy aircraft armed with extended range anti-ship missiles and the importance of anti-air defense including AEW, ECM, and other defensive systems.

While the submarine threat was the most pernicious threat to Allied shipping and support vessels during WWII, enemy air attack was also a danger, especially in the early years of the war when Allied air superiority was not assured.¹³⁰ Enemy action poses a severe threat to sustain operations over the long-term.

Given the extended stand-off range of modern missiles and sensors, it will be critical that merchant ships are afforded adequate protection. The British in the Falklands suffered from a lack of effective AEW and air-intercept capabilities, possession of which may have prevented the sinking of the *Atlantic Conveyor*. An interesting note is that the missile was likely diverted from its intended target by the successful deployment of ECM and chaff decoys by the *HMS Ambuscade*, one of the escort ships. Unfortunately, this resulted in mission failure when it inadvertently caused the missile to lock on to one of the protected ships.¹³¹ The British escort screen was further diminished by detaching a large number of assets for ASW operations in search of the Argentinian submarine.

¹²⁹ *Official U.S. Navy Report*. 10.

¹³⁰ Navy Matters blog, "Neosho Lessons." April 8, 2019. <https://navy-matters.blogspot.com/2019/04/neosho-lessons.html>. (accessed April 8, 2019).

¹³¹ Hughes and Girrier. 148.

In order to effectively protect merchant and other support ships, especially over lengthy SLOC, the case studies suggest two solutions. The first is employment of escorted convoys. The size and composition of convoys, along with the number of escorts, will depend on several factors. Experience in WWII showed the increased efficiency and decreased risk of large convoys. It is likely these benefits still hold when sailing trans-oceanic or long-distance routes over unsecured SLOC. For littoral operations, smaller convoys may be more appropriate, however further study of convoy tactics in the modern environment is necessary. Convoying requires the dedication of a significant number of naval assets, including surface ships and patrolling aircraft, to provide protection. The U.S. Navy had nearly 6,000 ships in 1945 and close to 600 ships by the end of the 1980s. Currently, the U.S. Navy has just under 300 ships. For such a strategy to be effective, the Navy would need to put more ships in the water to handle escort duties. These would probably be small frigate or corvette type ships which have been used effectively for such duties in the past, are less expensive than larger surface combatants, and could be fielded in the numbers necessary.¹³² The Navy, however, has already warned the MSC that it would be unable to spare ships to escort the logistics vessels. Instead, they were warned to “go fast and stay quiet.”¹³³ Admiral King might disagree with the viability of that plan.

The literature recommended the reinstitution of embarked military detachments and inclusion of organic defensive capabilities on merchant ships. Information from the case studies support this idea. Ships employed for sealift should have an AEW capability

¹³² Berosky.

¹³³ Otto Kreisher. “Alerts Sound on Maritime Logistics: Several Experts See Serious Lacking Sealift Capability.” *Sea Power*. Aug. 29, 2019. <https://seapowermagazine.org/alerts-sound-on-maritime-logistics-several-experts-see-seriously-lacking-sealift-capability/>.

and, at a minimum, ECM which can defend against airborne, missile, and sub-surface threats. The Iranians developed a rudimentary but effective decoy against Iraqi Exocet missile strikes on their shipping during the Tanker War. More advanced systems could be employed on U.S. supply and logistics ships, including close-range defensive systems capable of disrupting or destroying enemy missiles as a last line of defense. MILDETs would be required to operate and maintain such equipment, fire any defensive weapons, and could also supplement the ship's company with damage control responsibilities. If the Navy truly is unable to provide armed escort to logistic ships, the presence of MILDETs will be all the more critical.

While enemy missile ranges are increasing, incidents during the Tanker War show the difficulty of identifying and targeting ships and aircraft in congested sea-lanes and air traffic, especially at extended range. Over-the-horizon weapons such as ASCMs and ASBMs require target cueing by sensors close enough to identify and guide the missile to the target. American support ships will have to take advantage of their maneuverability, use deceptive lighting, and employ other tactics to blend in with other maritime traffic, complicating the enemy targeting cycle. Civilian mariners operating these vessels should be trained in such tactics now so that they are capable of employing them on Day 1 of a conflict, before targeting by enemy action at the outset of war and before other defensive measures can be employed.

Each of these cases also illustrate that attrition through enemy action is highly likely and must be accounted for during planning. Attrition can have a negative effect on overall operations, particularly when logistics ships are in short supply. A robust reserve capacity is critical to filling these gaps in order to sustain operations over a protracted

conflict. As discussed in the literature, modern ships designed for peacetime efficiency are expensive, large, and can transport a large amount of cargo. The danger of concentrating essential personnel, supplies, and war materiel in such ships is that the loss of one (or more) can have outsized effects on the overall operations, as illustrated by the sinking of the *Atlantic Conveyor* in the Falklands War. The U.S. and allied powers dealt with this during WWII through a heroic shipbuilding effort that replaced ships which had been lost faster than they could be sunk by the Germans. Additionally, there is a major difference between 10,800 dwt Liberty ships and the 300,000 dwt ships of today. Liberty ships could be quickly and easily built and the loss of any ship sunk only brought with it the loss of a limited amount of cargo, thus minimizing the risk of losing a large amount of precious supplies.

Shipbuilding capacity was one of the keys to Allied victory in WWII. Neither the Falklands War nor the Tanker war required the sustainment of an immense amount of shipping over such a protracted period. Given the diminished U.S. industrial base and limited number of shipyards, replenishment of losses suffered due to enemy attack would be problematic. Targeting U.S. sealift early in a conflict could put the U.S. at a distinct disadvantage if it is not able to move troops or heavy equipment or keep its air, ground, and naval forces supplied. While sealift attrition was an issue in WWII, with the Battle of the Atlantic in doubt until mid-1943, the U.S. had prepared by laying the groundwork through legislation in the years prior to the war funding a massive shipbuilding program along with its corresponding infrastructure. It is doubtful that the Allies would have won the war in 1945 had these prescient steps not been taken. Alfred Thayer Mahan, the renowned U.S. naval strategist of the late 19th century, noted, “The creation of material

for war, under modern conditions, requires a length of time which does not permit the postponement of it to the hour of impending hostilities.”¹³⁴ This is no less the case today given the increased expense, size, and complexity of modern vessels in comparison with those of WWII, 75 years ago.

The effects of modern munitions on merchant ships can be devastating although not guaranteed. When the *Bridgeton* was struck by a mine in the Arabian Gulf, the ship was able to complete its voyage despite a large explosion resulting in serious damage. Conversely, had one of the escorting warships struck the mine, they likely would have suffered severe damage and possibly sunk.¹³⁵ The large size of the *Bridgeton*, one of the largest ships in the world, worked in its favor. It also benefited from compartmentation and the fire-squelching property of a hold filled with oxygen depriving diesel fumes (as the ship was empty). Likewise, a hold filled with crude oil would have had a damping effect. A ship filled with fuel, ammunition, or other combustible material would likely not be so lucky. Perhaps the greatest danger to any ship struck by an explosive device is fire. Containing a fire or uncontrolled flooding and saving a ship requires fast, effective damage control. The small size of merchant ship crews is not conducive to effective damage control, especially on a very large ship. Likewise, civilian mariners receive much less training than their naval counterparts when it comes to combat damage control, making the ships more vulnerable.

¹³⁴Alfred Thayer Mahan. *The Interest of America in Sea Power, Present and Future*. Little Brown: Boston. 1917: 176.

¹³⁵ Of note, the U.S. Navy frigate *USS Samuel B. Roberts* did in fact strike an Iranian mine and was nearly sunk on April 14, 1988. Once again, only the courage of the crew and skilled damage control efforts prevented her from going to the bottom. Zatarain. 187-203.

The Falkland Islands campaign highlighted the value of purpose-built transport and logistics ships. The British encountered difficulties with heavy seas, poor weather, and lack of adequate port facilities for off-loading personnel and equipment. Additionally, many of the ships were not designed to carry and unload the type of cargo required. Construction of smaller ships capable of operating in heavy weather and shallow littoral areas, with the ability to offload cargo and personnel in austere environments, should be encouraged. Operation of smaller ships would also spread the risk of loss from any one ship. They would be less expensive, easier, and quicker to build and would more readily be able to replace ships lost through attrition.

The U.S. will also likely need to continue to support a robust U.S. flagged merchant fleet to supplement such ships and conduct large-scale transport of supplies over long distances in support of U.S. forces and even allies who may be suffering from blockade or inability to supply themselves due to conflict. The U.S. merchant fleet continues to shrink, despite the existence of the Jones Act which was enacted to support it. George Will recently argued for scrapping the Jones Act for economic reasons, dismissing the importance of maritime sealift to modern military operations, having been largely superseded by airlift.¹³⁶ That is inconsistent with the literature which, along with this study, demonstrates that sealift is essential to supplying American forces at war. Airlift is incapable of replacing the capability, capacity, and efficiency offered by maritime transport.

Each case demonstrated the value and virtual necessity of forward staging areas to facilitate consolidation of supplies and shorten extended supply lines. Such areas allow

¹³⁶ George Will. "The Jones Act: A Drag on America's Economy." *National Review*. April 7, 2019. <https://nationalreview.com/2019/04/jones-act-crony-capitalism-shipping-industry>. (accessed April 7, 2019.)

shorter round-trip travel time of transport vessels as well as the addition of airlift to supplement movement of troops and equipment to the theatre of operations. The remoteness of the British forward staging base at Ascension Island complicated its logistical effort. This was particularly true given the lack of any allied support. The Allied effort during the Battle of the Atlantic demonstrated the benefit of pooling resources and the division of responsibility to ensure availability of adequate sealift, defend the transport ships and SLOC despite enemy opposition in contested waters, and facilitate staging of cargo and personnel near the operational area. International cooperation will be especially important in the future considering the reduced size of the U.S. and partner naval and merchant fleets.

WWII provides one final valuable lesson given current circumstances. Analysis of the literature and case studies clearly demonstrates the inadequacy of current sealift for operations in a contested environment, which would be a requirement for the U.S. to successfully confront peer and near-peer competitors if necessary. This is not the first time in history the U.S. has found itself lacking the necessary resources to meet its strategic objectives. The U.S. did not have the capacity it needed when it entered WWII. Foresight and preparation allowed the U.S. to begin increasing production prior to the war, but it was not until about a year and a half after Pearl Harbor that the tide turned and the trans-Atlantic SLOC and logistics chain were largely secured. The U.S. can recover from its present deficiencies, overcome these challenges to meet its strategic objectives, and set the conditions for victory in a future conflict. The time to act, however, is well before the onset of hostilities. By deferring adequate preparation until war begins, it may

be too late for the U.S. to recover and put enough hulls in the water to supply its Navy and forces engaged in combat abroad.

Conclusion

This research concludes that U.S. sealift capacity is insufficient for the challenges of great power competition. This finding is based on both the current literature and a review of the presented case studies. This study also suggests some recommendations for addressing this deficiency. Policy makers, navalists, and U.S. taxpayers should give this critical issue serious thought now, before it is too late to ensure the U.S. is prepared for the next conflict.

First, it is recommended that the U.S. maintain and enact policies which promote the U.S. flagged merchant fleet and the development of trained civilian mariners. Second, the U.S. should reduce the decline in its industrial base and ship-building capability and increase construction of both merchant ships and the naval ships which will be required to protect those ships and the SLOC they transit. Third, civilian mariners should receive training in passive defensive measures related to maneuver and masking their ships in other maritime traffic to increase their survivability at the outset of a war. Fourth, preparations should be made in the event of war to embark MILDETs on civilian ships along with adding defensive capabilities including AEW sensors, ECM and defensive systems, and close-in defensive weapons. Fifth, the U.S. Navy should establish doctrine and the capability for large scale escort and convoy operations. Sixth, the U.S. should be prepared for the attrition of personnel, ships, and cargo in a future conflict and make early preparations to backfill those losses. Seventh, the U.S. should encourage

private industry to develop the modern equivalent of the Liberty ship—moderately sized, inexpensive, and capable of being built in large numbers and a short amount of time. The MSC’s *Spearhead* class Expeditionary Fast Transport ship is currently an example of such design, although a ship capable of carrying more cargo over larger distances would be required.¹³⁷ Finally, the U.S. government and U.S. Navy should start seriously considering these issues now, before the next conflict.

In closing, the history of the United States and the objectives of the 2017 National Security Strategy indicate a clear preference for fighting its wars abroad. Essential to the expeditionary nature of such wars is the ability to keep its allies, troops, and air and naval forces supplied by sea. This capability has been allowed to degrade over the years. The renewed focus on peer competition and high-end conflict argues strongly for rebuilding it. In closing, Alfred Thayer Mahan observed the following over one-hundred years ago:

Every danger of a military character to which the United States is exposed can be met best outside her own territory—at sea. Preparedness for naval war—preparedness against naval attack and for naval offence—is preparedness for anything that is likely to occur.¹³⁸

This is no less true today than it was in Mahan’s day.

¹³⁷ Mercogliano. “Sealift, Logistics & MSC.”

¹³⁸ Mahan. *The Interest of America in Sea Power*. 214.

Is the U.S. Navy Ready for Great Power Competition? World War II and the Cold War

In carrying out the task assigned....you will be governed by the principle of calculated risk, which you will interpret to mean the avoidance of exposure of your force to attack by superior enemy forces without good prospect of inflicting, as a result of such exposure, greater damage on the enemy.

-Adm. Chester W. Nimitz, USN 1942¹³⁹

This is going to be a fighting ship. I intend to go in harm's way, and anyone who doesn't want to go along had better get off right now.

-CDR Ernest E. Evans, USN, 1943¹⁴⁰

The United States boasts the most powerful military in the world. It certainly is the most expensive. The U.S. Navy has been said to command the seas, with no foe capable of opposing it. But is this true? A recent Heritage Foundation assessment of the U.S. Navy concluded that its capability, capacity, and readiness are all “marginal.”¹⁴¹ The U.S. fleet is at historic lows and is smaller than it has been since World War I. Simultaneously, China and Russia are modernizing and expanding their navies. Regional actors such as Iran are acquiring advanced technology and continue to be a threat to U.S. naval forces. In 2017, the U.S. government formally recognized the return of great power competition and reoriented the national security apparatus towards making this the

¹³⁹ Samuel Eliot Morison. *History of United States Naval Operations in World War II. Vol. 4. Coral Sea, Midway, and Submarine Actions May 1942 – August 1942.* Little Brown: Boston. 1949; 84.

¹⁴⁰ CDR Evans at the commissioning of the destroyer *USS Johnston* (DD-557). *Johnston* was part of *Taffy 3* off Samar in the battle of Leyte Gulf was sunk after heroically confronting the main Japanese battle fleet under Kurita. CDR Evans posthumously received the Medal of Honor. From “*Johnston* (DD-557).” *Naval History and Heritage Command*. Oct. 30, 2019. <https://www.history.navy.mil/browse-by-topic/ships/modern-ships/johnston.html>. (accessed Dec. 12, 2019).

¹⁴¹ The Heritage Foundation. *An Assessment of U.S. Military Power: U.S. Navy*. Oct. 30, 2019. <https://www.heritage.org/military-strength/assessment-us-military-power/us-navy>.

number one strategic priority. As mentioned in the preceding chapter, this change was announced in the Trump Administration's 2017 National Security Strategy (NSS)¹⁴². The following year, this was followed up the with the 2018 National Defense Strategy (NDS), which set the tone for the future direction of the Department of Defense (DOD).¹⁴³

These documents marked a change in strategic focus from counterterrorism and contingency operations to great power competition and directed the DOD and other national security components to orient their efforts towards these peer competitors. This chapter examines historical case studies from the 20th Century in which the U.S. Navy successfully confronted peer adversaries and contributed to overall U.S. victories. The cases are analyzed and studied for lessons learned which can inform the question, is the U.S. Navy ready for the challenges of great power competition?

This analysis will continue in the following chapter which examines the U.S. Navy from 2001, through the Global War on Terror (GWOT) and wars in Iraq and Afghanistan to the adoption of the 2017 NSS. A contrast will be drawn between the national and naval strategy of this era, when the Navy was virtually unchallenged at sea, and the two preceding eras to be discussed in this chapter. It also explains how the Navy got to where it is today, which will help illustrate what must be done to orient and prepare the Navy for great power competition.

The research begins with a survey of relevant literature on the topic. There is a wealth of books, articles, and other material on grand strategy, maritime strategy, naval

¹⁴² United States and Donald J. Trump. *National Security Strategy of the United States of America*. Washington D.C.: White House. 2017.

¹⁴³ Department of Defense. "Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge." Washington, D.C. 2018.

operations, and other maritime and naval matters. The following chapters are divided into three recurring themes: the threat, the fleet, and the strategy, which are used as a template throughout the research. After a brief discussion of the methodology, the chapter continues with an examination of two historical case studies; World War II and the late Cold War. This research will continue in the next chapter with examination of a final historical case study, the GWOT. These studies are followed by an analysis and a series of recommendations. Specifically, these two chapters look at what made the Navy successful in past conflicts and addresses the implications of those findings for today's force.

Literature Review

This review categorized the literature into three related themes: the developing threat related to naval competition (the Threat), U.S naval capability (the Fleet), and U.S. strategy (the Strategy). This review identified several prominent naval thinkers and writers including Claude Berube, the pseudonymous blogger and podcast host CDRSalamander, Seth Cropsey, Jerry Hendrix, James Holmes, Wayne Hughes, Bryan McGrath, Ronald O'Rourke, Robert Rubel, and Sam Tangredi. In addition to the published books and the peer-reviewed journal *Naval War College Review*, this review also found the *U.S. Naval Institute Proceedings*, *National Interest*, *Foreign Policy*, and blogs *War on the Rocks*, and the *U.S. Naval Institute Blog* to be prominent forums for discussion of these issues by navalists and other thinkers. These lists are by no means exclusive, with important work by the RAND Corporation, Hudson Institute, and

Congressional Research Service included among a host of other sources of information on naval matters.

The Threat

China

Widespread consensus exists on the emergence of the People's Republic of China (PRC) as a great power. China does not subscribe to the American-led world order and has long-term strategic interests at odds with those of the U.S. These include the reunification (by force if necessary) with Taiwan, regional hegemony in the Western Pacific, taking its perceived rightful place as the dominant power in Asia, and establishing itself as a great world power. To accomplish these goals, the PRC has recognized that it requires a blue water naval fleet which can confront the U.S. Navy and prevent it from successfully intervening in China's near abroad and obstructing the accomplishment of Chinese strategic objectives. Towards that end, the People's Liberation Army Navy's (PLAN) rapid modernization and expansion includes fielding advanced capability ballistic and hypersonic anti-ship missiles, a robust anti-access/area denial (A2AD) capability, and advanced warships including aircraft carriers, high-tech destroyers, submarines, and a growing fleet of small, potent missile boats.

The PRC aggressively uses gray-zone operations and salami-slicing tactics to improve its strategic position in the South China Sea, which is of particular concern to the U.S. Navy. This is combined with the PRC's Belt and Road Initiative and other measures in a carrot and stick approach to incentivize and develop diplomatic and economic leverage over other regional powers in an effort to break them away from the U.S. sphere of influence. Toshi Yoshihara and James Holmes' *Red Star Over the Pacific*, Jonathan

Ward's *China's Version of Victory*, and Andrew Erickson's series of books on China's sea power have documented all of these activities at book-length. Ward argues that China's military is designed to defeat the U.S. military should China see war with the U.S. as necessary to its strategic objectives.¹⁴⁴ Ultimately, China seeks to compete with the U.S. Navy on an equal, if not superior, footing in the western Pacific.

Russia

Less well-recognized in the literature outside of naval professionals is the maritime threat posed by Vladimir Putin's Russia to U.S. national security. The Russian threat in the form of cyber operations, espionage, and election meddling is well documented, as is its threat to its neighbors through intimidation, gray-zone operations, and military interventions. Similar to China, Russia uses the carrot and stick approach of economic leverage via its large natural gas reserves in an effort to influence its neighbors and European states away from the U.S. This also includes supplying Russian arms to client or potential client states to spread its economic and military influence. Additionally, the lack of investment by North American Treaty Organization (NATO) member states and questions regarding their commitment to their treaty obligations may prove destabilizing and increase the relative threat posed by Russia. Russia has recently used its navy to exert influence abroad through the deployment of warships to the Mediterranean and establishment of a naval base in Tartus in support of its operations in Syria. Some, however, do not believe that Russia poses a significant threat to the U.S., and that the greater threat remains non-state actors and terrorist groups.

¹⁴⁴ Jonathan D. T. Ward. *China's Vision of Victory*. U.S.A.: Atlas. 2019; xvii.

The reemergence of the Russian naval threat is clearly recognized in the pages of the *U.S. Naval Institute Proceedings*. While the Russians cannot project power abroad like the U.S. Navy, its modernized submarine fleet presents a major threat to U.S. and NATO Sea Lines of Communication (SLOC). Russia also possesses an advanced A2AD network. It has invested heavily in advanced missile technology and a growing fleet of surface combatants, which could challenge the U.S. and NATO in a regional conflict or deny access to crucial chokepoints.

Greater attention has also been drawn recently to Russian undersea activities. The newest Russian submarines are extremely quiet and difficult to track, while also being highly capable. In addition to their role in Russian strategic deterrence, ability to assail U.S. and NATO supply lines, or launch precision strikes against targets ashore, they are suspected to have an interest in and the ability to threaten the network of undersea cables on which the world relies. Internet traffic, secure communications, and financial transactions all transit the vast network of such cables which cross the seafloor. Deep-water submarine and surface ship activity in the vicinity of these cables has raised the specter that Russia may seek to tap or cut some of these cables in support of Russian gray zone or military operations. Russia could potentially cause an information blackout, interrupt markets, or wreak diplomatic and economic havoc through manipulation of these cables.¹⁴⁵ The Russians, like the Chinese, see the navy as an important symbol of national power. While Russia is unlikely to present as large a naval threat as is China, it can use its undersea warfare capability as an asymmetric challenge to U.S. interests.

¹⁴⁵ James Glanz and Thomas Nilsen. "A Deep-Diving Sub. A Deadly Fire. And Russia's Secret Undersea Agenda." *The New York Times*. April 20, 2020. <https://www.nytimes.com/2020/04/20/world/europe/russian-submarine-fire-losharik.html>.

Iran

Iran, possessing a formidable regional navy with advanced missile capability and a fleet of small, fast missile craft, rounds out the major naval threats faced by the Navy.¹⁴⁶ While Iran would be no match for the U.S. in open-ocean fleet combat, the geographic constraints of the Arabian Gulf, Strait of Hormuz, and Gulf of Oman favor the strengths of the Iranian fleet. The U.S. Navy's technological advantage has diminished with respect to other navies, including Iran's. The proliferation of advanced missile technology and increasing missile lethality make even the incredibly expensive and powerful aircraft carrier vulnerable to volleys of relatively cheap missiles, especially in a littoral environment. Much attention was paid to this threat throughout 2019, given simmering tensions in the region. While the consensus is that the U.S. Navy would win a fight with Iran, it would likely come at significant cost with strategic consequences for its position in other parts of the globe in relation to China and Russia.

One may question whether any of the aforementioned countries truly have the wherewithal to present a significant naval threat to the United States. As identified by the Congressional Research Service, China's PLAN already outnumbers the U.S. Navy, not only in the western Pacific, but in total number of ships. While the U.S. maintains a qualitative edge, the Chinese are fast chipping away at it. Both Russia and Iran are investing in asymmetric capabilities which can also cause serious trouble for the U.S.

¹⁴⁶ The acting Secretary of the Navy, Thomas Modly, stated that in considering threats to the U.S. Navy, he uses "Iran" in quotes, as a metaphor for unpredictability. Such unpredictable threats could include North Korea or other regional crises which arise and impede the Navy's effort to focus its resources and operations on China and Russia, which are viewed as the primary threats. As he explained, steaming a carrier to the waters near Iran for 10 months, as was done in 2019, has impacts on readiness throughout the force. Thomas Modly. "Are We Building the Naval Power the Nation Needs?" Address. Defense Forum 2019 from U.S. Naval Institute. Washington, D.C. Dec. 5, 2019.

Navy. U.S. budgetary concerns are no secret, nor is the declining number of U.S. ships and the likelihood of future budget reductions, especially in the aftermath of the novel-coronavirus 2019 (COVID-19) pandemic and its economic implications. The perceived decline, weakness, or unwillingness to act on the part of the U.S. could provide any of these other powers with what they see as an opportunity to challenge the status quo in a manner unfavorable to the U.S., before the U.S. has time to react or at a cost the U.S. is unwilling to pay.

Likewise, these countries may feel they have a limited window to act if they perceive their own vulnerabilities will foreclose such options in the future. For instance, the undiversified Russian economy is reliant on exports of fossil fuels, the price of which have recently bottomed out with the COVID-19 pandemic. China may face a global backlash and pull back of critical foreign industry and investment, which could negatively impact its economy. Iran has been severely impacted by COVID-19 and is facing unrest and threats to its regime. Any of these factors could change the strategic calculus of one of these ruling regimes, leading it to engage in risky behavior or aggression while it feels it still can. As a result, the U.S. cannot count on such vulnerabilities in each of its potential adversaries as lowering the risk those countries pose to U.S. national security.

The literature demonstrates that the U.S. Navy faces a variety of complex threats abroad from increasingly advanced and capable adversaries. We will next turn to what the literature says about the U.S. Navy today. How does the Navy currently stack up against these threats?

The Fleet

Does size really matter?

The current size of the fleet, the question of the ideal fleet size, and the fleet's composition have been major points of discussion in the naval community for some time. The size of the fleet had fallen to historically low levels, even as its operational tempo increased. U.S. naval supremacy in the Cold War resulted in diminished resources but not a diminished requirement for naval forces by geographic combatant commanders. Naval power plays a critical role even in peacetime, serving as the nation's forward presence and crisis response while facilitating global commerce and U.S. military operations around the globe.

Bryan McGrath, Seth Cropsey, Jerry Hendrix, and Robert Lehman have all argued persuasively that the current fleet is too small and that to effectively defend its national security interests, the U.S. should have a fleet north of 350 hulls at a minimum. Unfortunately, there is currently insufficient public interest or political will to adequately fund the navy or attend to the naval challenges faced by the U.S. American sea power is reaching a low ebb which could have devastating results for American national security and American interests. While most navalists would agree, the common counterargument to this line of thought is that the U.S. cannot afford the expense required to maintain the world's premiere navy, particularly given burgeoning domestic spending and U.S. national debt. This is a question which the public must decide fully aware of the consequences of their choice.

Composition & technology

Fleet composition and the development of new technology has brought its share of controversy over recent years. During the naval drawdown which began after the end of the Cold War, the Navy retired many mission-specific ships and capabilities, instead combining multiple capabilities and functions into a limited number of increasingly complex and expensive multi-purpose ships. This reduced the overall fleet size and limited the Navy's capability in certain specialty areas of naval warfare. New technologies for advanced sea combat were not prioritized. The fleet and its carrier air wings became homogenized and expected to perform all roles rather than just those to which they were well suited. This has allowed adversaries a window of opportunity in lead-time for development of their own advanced weapons designed to target the U.S. Navy.

Finally, naval transformationalists who have pushed the adoption of revolutionary technology which bring expensive, untested, and unproven technologies to the fleet have come under increasing criticism. Redundancy and survivability in combat have been sacrificed for efficiency. In terms of personnel, diversity has been prioritized over readiness. Fewer ships and increasing demands placed on a smaller work force have led to an unsustainable operational tempo resulting in deferred maintenance, unfilled billets, and ships getting underway without being fully mission capable. Additionally, design, construction and bringing new ships to full operating capability takes decades in some cases and typically results in huge cost-overruns. Ships are delivered with revolutionary technologies which have not been fully developed, leaving the ships unable to perform

their essential functions. Anti-transformationalists argue for evolutionary rather than revolutionary technology, which can be fielded more quickly and at lower cost. While this philosophical tension has existed for decades, a litany of failed programs (ie. the Littoral Combat Ship, *Zumwalt* class destroyer, aircraft carrier *USS Ford*) and recent leadership changes in the DOD may be shifting the balance in favor of the anti-transformationalists.

This debate ties into the debate over the future of the aircraft carrier as the central component of U.S. naval power. Expensive to build, maintain, and operate, the aircraft carrier possesses massive striking power and offers unmatched operational flexibility. As a mobile platform operating in international waters, it requires no basing rights or stationing U.S. personnel on foreign soil. However, advanced A2AD technology, including high-tech sensors and anti-ship missiles being deployed by U.S. adversaries, make the carrier increasingly vulnerable. While virtually an impregnable bastion of U.S. might in a permissive environment at sea, it is questionable whether the carrier is too vulnerable and too valuable to lose in the contested maritime environment in which the Navy would likely find itself should great power conflict erupt. To make matters worse, increasing construction costs and decreasing defense budgets may limit U.S. ability to continue to construct supercarriers. Some, such as Jerry Hendrix, argue that the U.S. should stop building supercarriers and focus on less-expensive platforms, rely on unmanned platforms and missiles, relegate the aircraft carrier to a diminished, supporting role. Others, such as Bryan McGrath and Seth Cropsey, counter that carriers remain the most flexible, adaptable, and powerful weapon in our nation's inventory and that the U.S. would be wiser to increase defense spending to a more appropriate level along with a

corresponding decrease in entitlement spending. While the carrier will likely continue to occupy a key role in U.S. power projection capability in both peace and war, evolving technology, cost, and the realities of naval combat against a peer adversary would likely drive the Navy to produce larger numbers of less expensive, more expendable, lethal ships carrying advanced missiles as well as unmanned vessels. This would spread risk and allow operations inside an adversary's A2AD umbrella while protecting high-value assets and complicating enemy targeting and engagement solutions.

The Strategy

The discussion regarding the nature of the fleet is closely tied to those regarding strategy. Naval experts have differing viewpoints on the current U.S. naval strategy as the Navy seeks to define its current strategy to address the recently changed geopolitical global situation. The post-Cold War 1992 Naval Strategy, entitled ...*From the Sea*, had embraced the U.S. Navy's uncontested command of the sea. ...*From the Sea* guided the fleet's transformation from one geared to fight enemy fleets at sea to one which could exploit the permissive maritime environment to support national objectives ashore through strike and expeditionary operations. This mindset largely governed naval strategy up through the issuance of the 2017 NSS and related 2018 NDS, which refocused the U.S. military and national security establishment on the threats from technologically advanced peer competitors. The Navy can no longer assume sea control as a birthright but must prepare for a high-end fight to confront peer and regional competitors who will contest its command of the sea.

While the 2018 NDS gave the Defense Department a general direction, as Sam Tangredi observes, the Navy does not currently have a coherent, public, strategic vision.

Despite lacking an updated official naval strategy, the Navy is exploring several strategic concepts as it adapts to the current situation. There are two major operational concepts of note in the literature designed to further an updated maritime and naval strategy. The first is Distributed Maritime Operations (DMO, also sometimes referred to as distributed lethality). As explained by proponents, it involves increasing the offensive capability of ships in the fleet and operating them in dispersed formations. Advocates argue that DMO would complicate the enemy's scouting and targeting efforts as well as bring a more survivable punch to the fleet.

Others question whether the Navy has enough suitable ships for DMO to be workable or raise concerns about the viability of the networked communications required to allow distributed forces to communicate and execute proper command and control. Traditional theories of naval combat, such as those espoused by Alfred Thayer Mahan, have historically emphasized concentration of a battle fleet at the decisive time and place to defeat an enemy's fleet. Some modern naval professionals argue that this truism still holds, especially a likely network-denied environment of combat against a technologically advanced adversary.

Some argue that the nature of the threat in the modern maritime environment indicates that the Navy should look less to Mahanian fleet engagement and sea-control strategies and more towards the ideas of British naval theorist Julian Corbett, who argues that naval operations should be closely intertwined with military operations ashore. This fits with the 2018 NDS, which emphasizes increasing lethality of the joint force and appears to be in line with the Marine Corps' 2019 *Commandant's Planning Guidance*, which fundamentally sees the Marines contributing to the Navy's sea control mission

through concepts like Littoral Operations in a Contested Environment (LOCE) and Expeditionary Advanced Base Operations (EABO). Marine Corps realignment will focus primarily on the vast maritime sphere of the Pacific and allow the Marines to disperse forces across islands and the western Pacific littoral to form an American A2AD network. These concepts will use mutual support between the Marines and the Navy to contain the PLAN in the first island chain and enable the U.S. to retain the freedom of maneuver.

Timeless naval principles

Finally, a review of the literature would not be complete without a brief discussion of the seminal work on naval tactics, *Fleet Tactics and Naval Operations*, by Captain Wayne P. Hughes USN (Ret.) and Rear Admiral Robert P. Girrier, USN (Ret.). This treatise covers tactical development from the mid-seventeenth century through today, discussing trends, constants, and technological advances. The book discusses the mathematical model and salvo equations which can be used to predict the outcome of naval combat. Hughes and Girrier identify six cornerstones of naval operations, which bear mentioning:

1. Sailors matter most.
2. Doctrine is the glue of tactics.
3. To know tactics, know technology.
4. The seat of purpose is on the land.
5. “A ship’s a fool to fight a fort.”
6. Attack effectively first.¹⁴⁷

¹⁴⁷ Wayne P. Hughes Jr. and Robert P. Girrier. *Fleet Tactics and Naval Operations*, 3d Ed. Naval Institute Press: Annapolis. 2018. The first edition of this book was published in 1986, and quickly became the essential primer on naval operations. A second edition was published in 2000, focusing on littoral

These precepts should be kept in mind when discussing naval fleets, operations, and strategy, and apply to the research and analysis which follows in this and the subsequent chapter.

In summary, there is widespread consensus regarding the fact that the Navy is threatened at sea by high-technology peer and near-peer adversaries in a way in which it has not been challenged since the Cold War. Opinions diverge however, on how much the U.S. should invest in its naval capability, how its fleet should be composed, as well as the best strategy for the Navy as it seeks to deter conflict with major competitors while preparing to fight, if necessary, and win at sea. The remainder of this chapter and the next will look through the lens of history for lessons about the fleet the U.S. needs today and what kind of strategy should it pursue.

Methodology

This study focuses on American naval capability using the template of historical case studies. The studies will be used to evaluate U.S. naval capability relative to the challenges of great power competition. Historical case study is a widely recognized scholarly approach to using the past to understand the present, to draw conclusions about current problems, and to recommend courses of action in light of historical successes and failures. This chapter will examine two historical cases in order to better understand U.S. naval capability during previous eras of success to better understand the needs of the Navy today in the era of renewed great power competition.

operations in line with evolving U.S. naval strategy. The third edition returns to a focus on fleet combat and is updated to account for modern naval technology.

The first case is World War II, which provides the last example of global naval combat between great powers. The position of the U.S. during that war is similar to what it could face today in a worst-case scenario, in that it confronted two loosely-allied great power adversaries on opposite sides of the world. Operations in the African and European theatres relied on Allied naval success in securing their SLOCs in the Battle of the Atlantic while operations in the Pacific Theatre were primarily maritime in focus and involved fights over key terrain, the seizure and occupation of which were critical to the U.S. advance. These factors are just as important today. This case provides historical study of actual naval combat on a global scale.

The second case is the naval build-up in the 1980's, culminating in the end of the Cold War. Along with President Ronald Reagan's Administration Maritime Policy, the naval buildup played a significant role in defeating the Soviets to end the Cold War. This era saw significant naval expansion and development of an offensive strategy which put the Soviets on the defensive. This case illustrates the development and exercise of new tactics and strategic concepts in the modern missile era and also includes a naval shooting war in the Arabian Gulf.

Case Study – World War II

World War II (WWII) was a globe-spanning great power conflict fought on land, sea, and air. Maritime strategy and naval operations were crucial to U.S. and Allied success during the war. Most key maritime terrain and SLOC which were important during the war remain critical today and would likely factor into any future naval conflict. This case will examine WWII for lessons relevant to the Navy's situation today.

The Threat

The principal maritime threats to the U.S. during WWII came from Germany and Japan. Italy possessed a formidable navy at the outset of the war, however it did not have a significant impact on U.S. operations. While Germany, Italy, and Japan were all parties to the Tri-Partite Pact, the Axis powers never truly cooperated in their operations against the Allies in the manner of close coordination between the U.S., Britain, and the USSR. This often resulted in the Axis powers at worst operating at cross-purposes and at best without the benefits of operating in concert.¹⁴⁸ The failure of the Axis powers to fully exploit the advantage offered by their partnership was disastrous for their efforts during the war and was compounded by the Allies' cooperation and coordinated strategy.

The Nazis did not have a well-orchestrated grand strategy. The German Führer, Adolf Hitler, did not expect war with Britain over Poland and his express strategic aims were largely related to domination over Europe, despite his subsequent disastrous decisions to invade the USSR and declare war on the United States. In fact, as mentioned in the previous chapter, his decision to go to war against the U.S. was largely due to his desire to attack and cut off American convoys of supplies and war materiel to Britain once they were no longer protected by the fig leaf of neutrality. Additionally, he was confident the Japanese fleet would tie up the U.S. Navy, hindering any effective response

¹⁴⁸ Victor Davis Hanson. *The Second World Wars: How the First Global Conflict Was Fought and Won*. Basic Books: New York. 2017; 511-512.

to his aggressive U-boat campaign. Beyond this, Hitler had no credible plan for the ultimate defeat of the U.S.¹⁴⁹

German maritime strategy was no better. Despite taking on the two greatest fleets in the world, Germany lacked a well-developed strategy. Focused primarily on waging war on land, Hitler gave inadequate thought to the importance of naval operations to his overall war aims. The German *Kriegsmarine* developed no carrier aviation capability and its heavy surface ships were used ineffectively and primarily for commerce raiding. These ships were expensive but insufficient in number to prove a serious threat to Allied naval forces. Additionally, they diverted funding which would have been better spent on the U-boat program. German naval strategy revolved primarily around commerce raiding to strangle Britain by cutting off her SLOC, forcing her capitulation. Despite limited numbers, the U-boats had great success early in the war, presenting an existential threat to the British by sending thousands of tons of critical supplies and war materiel to the bottom of the sea, causing even Winston Churchill grave alarm.¹⁵⁰ Ultimately, however, this strategy could not compete with U.S. industrial might, which replaced losses faster than the Germans could sink ships.¹⁵¹

Japan had long anticipated the possibility of war with the U.S. Throughout 1941, as relations soured and negotiations with the U.S. dragged on unsuccessfully, Japan considered its military options. The U.S. oil embargo left it starved for the oil which fueled its war machine. It would need to act to secure a new supply if the U.S. could not be persuaded to lift the embargo. Japan was already engaged in a major continental war

¹⁴⁹ Ibid. 26, 36, 43, 47-48.

¹⁵⁰ Churchill famously said, "The only thing that ever really frightened me during the war was the U-boat peril." Winston Churchill. *Their Finest Hour*. Cassel: London. 1949: 529.

¹⁵¹ Hanson. *Second World Wars*. 30, 34, 43, 140-142.

in China. It possessed a powerful army and navy, with both factions vying politically for strategic advantage in a government dominated by the military establishment. Japan wished to quietly take possession of French, Dutch, and British colonial holdings with all eyes on the war with Germany. The South Pacific territories of these countries held a large supply of oil, which Japan needed to secure to maintain its ability to carry out military operations. The one adversary which could frustrate Japanese plans was the U.S. Japan hoped therefore to neutralize the U.S. battle fleet, consolidate its holdings, and obtain a negotiated peace with the U.S. before the U.S. could bring its full industrial and military might to bear. The Japanese recognized that they lacked the ability to defeat the U.S. in the long-term if they could not obtain a negotiated settlement.¹⁵²

The Imperial Japanese Navy (IJN) was the third largest fleet in the world and was a very capable force with an array of aircraft carriers, powerful surface ships, and submarines. Japanese naval aviation fielded some of the most advanced combat aircraft in the world with experienced air crews and presented a formidable threat to enemy naval forces. Japanese naval strategy, however, was subject to conflicting strategic priorities and the power struggle of senior army and navy commanders.¹⁵³ Once the initial national strategy was established, however, the Japanese planned to concentrate their carrier forces for a strike on Pearl Harbor to neutralize the U.S. fleet while other naval and army forces struck south to secure Japanese SLOC and the critical oil supply in the East Indies. While the Pearl Harbor attack was seen in Japan as a success, it failed in its objective of neutralizing the aircraft carriers which constituted the most important part of the U.S.

¹⁵² John A. Adams. *If Mahan Ran the Great Pacific War: An Analysis of World War II Naval Strategy*. Indiana University Press: Indianapolis. 2008; 35-60, 62.

¹⁵³ Ibid. 31-32, 46-52.

battle fleet. Japanese strategy following Pearl Harbor failed to capitalize on their success, squandering the initiative and valuable time. They wasted months before settling on a strategy to attack Midway to force a decisive engagement with the U.S. carrier fleet and obtain a stepping-stone towards an amphibious assault on the Hawaiian Islands. Once the battle of Midway was lost, the IJN retreated into a more defensive posture, seeking to attrite American forces as they pushed their way across the Pacific. Given the divided focus of the U.S. between Germany and Japan at the beginning of the war, Japan was able to obtain local naval superiority over U.S. forces but failed to fully capitalize on this, a strategic blunder which allowed the U.S. to more quickly turn the tide on Japanese advances.¹⁵⁴

The Fleet

Over the course of the war, the U.S. Navy became the most powerful naval force the world had ever known. While more modest at the outbreak of war, it was technically the world's second-most powerful next to the British Royal Navy, which still ruled the waves. The IJN was the third most powerful, with a 5:5:3 ratio of capital ships between Britain, the U.S., and Japan established in the 1923 Washington Naval Treaty. However, by 1941, the IJN was more powerful in the Pacific than either the U.S. or British Pacific fleets and possessed the most aircraft carriers.¹⁵⁵

After the Pearl Harbor attack in December 1941, the U.S. Navy possessed 16 battleships, 7 aircraft carriers, 18 heavy cruisers, 19 light cruisers, 6 anti-aircraft cruisers, 171 destroyers and 114 submarines.¹⁵⁶ This fleet had to be divided between the Atlantic,

¹⁵⁴ Ibid. 58-59, 99-106.

¹⁵⁵ Hanson. *Second World Wars*. 143-144, 149, 151

¹⁵⁶ John Simkin. "United States Navy in the Second World War." *Spartacus Educational*. Aug. 2014. <https://spartacus-educational.com/2WWusaN.htm>.

where the Navy had been in a de facto state of war with Germany even prior to Pearl Harbor, and the vast Pacific, where Japan was expanding at an alarming pace. In the months preceding Pearl Harbor, the Navy anticipated the likelihood of war with both Japan and Germany but, because of its lack of readiness, it sought to stave off the onset of hostilities until at least 1942.¹⁵⁷

Fortunately, due in large part to the efforts of U.S. Representative Carl Vinson, large-scale naval construction was already underway, funded by the Vinson-Trammell Act of 1934¹⁵⁸ and Two Ocean Navy Act of 1940.¹⁵⁹ As a result of this new construction, including aircraft carriers, fast battleships, cruisers, destroyers, and other vessels, the fleet the IJN sank at Pearl Harbor was mostly obsolete, with the keels already having been laid on more modern ships.¹⁶⁰ Knowing these new ships, including a host of new carriers, were soon to be coming down the ways allowed Admiral Chester W. Nimitz, Commander-in-Chief of the Pacific Fleet, to be aggressive and take risks with his few available carriers.¹⁶¹

This construction was made possible through a massive ship-building industry, including a multitude of dry-docks, ship repair yards, and skilled workers. These yards often quickly turned around battle-damaged ships, allowing them to get back to sea quickly. The two-day turn-around of the battle-damaged carrier *Yorktown* at Pearl Harbor prior to the Battle of Midway is an example of how such repair capability could

¹⁵⁷ Roberta Wohlstetter. *Pearl Harbor: Warning and Decision*. Stanford University Press: Stanford. 1962; 231, 247.

¹⁵⁸ P.L. 73-135, 48 Stat. 503, March 27, 1934

¹⁵⁹ P.L. 86-757, 54 Stat. 779, July 19, 1940

¹⁶⁰ John F. Tarpey. "Uncle Carl." *U.S. Naval Institute Proceedings* 1982; 108(1): 39.

¹⁶¹ Adams. *Great Pacific War*. 117-119.

prove decisive in an American victory.¹⁶² In fact, American ship repair capability was so good that of the eight battleships seriously damaged or sunk by the IJN at Pearl Harbor, six were repaired and returned to the fleet, with five present to contribute to the final destruction of the Japanese fleet at Surigao Strait during the Battle of Leyte Gulf.¹⁶³

Contrary to popular belief, the battleship was neither obsolete after Pearl Harbor nor had the pre-war Navy turned a blind eye to the power of carrier aviation. While the carrier became the new primary capital ship around which the battle fleet was formed, an emphasis on combined arms resulted in critical roles for the battleship.¹⁶⁴ The U.S. continued to build battleships throughout WWII, including the four *Iowa* class fast battleships. The combined arms approach required rapid innovation and the fielding of a growing fleet of cruisers, destroyers, submarines, carriers, battleships, and other surface vessels as well as a diverse air wing made up of fighters, dive bombers, night-fighters, torpedo bombers, and patrol planes.

The U.S. Pacific Fleet was limited at the outset of the war by a lack of tankers and oilers. This restricted the forces Nimitz could commit to battle, particularly in terms of carriers and battleships, which consumed a lot of fuel. Fortunately, construction of auxiliary and logistics support ships such as tankers, oilers, tenders, LSTs (Landing Ship Tank) and other supply ships was prioritized, with the fleet boasting a robust logistics train by 1944. This enabled the continuous press of offensive naval and expeditionary operations across the Pacific while the Navy hunted U-boats, guarded the Atlantic SLOC,

¹⁶² Walter R. Borneman. *The Admirals: Nimitz, Halsey, Leahy, and King – The Five Star Admirals Who Won the War at Sea*. Little Brown: Boston. 2012; 250-253.

¹⁶³ Borneman. *Admirals*. 391-396.

¹⁶⁴ Trent Hone. *Learning War: The Evolution of Fighting Doctrine in the U.S. Navy 1898-1945*. Naval Institute Press: Annapolis. 2018; xiv-xv.

and supported European invasion forces.¹⁶⁵ The limited number of oilers early in the war was a major strategic vulnerability which the Japanese failed to exploit. These ships were vulnerable due to their slow speed and operation close to the combat zone and their loss would have crippled the ability of the Navy to conduct operations beyond the range of established supply bases.¹⁶⁶

The Navy entered the war with some new, yet not always mature, technology. Additionally, development of related doctrine sometimes lagged the deployment of technology to the fleet, leading to some early problems and a failure to exploit the technological advantages. Early on, American torpedoes carried by submarines, torpedo-bombers, and destroyers were unreliable and less capable than the fast, long-range Japanese Long Lance torpedo.¹⁶⁷ American sailors failed to grasp the capabilities of this potent Japanese weapon, leading to costly tactical blunders during close-range, ship-to-ship combat.¹⁶⁸

Radar was an innovation, the deployment of which initially outpaced tactical doctrine. U.S. commanders did not fully know how to take advantage of ship-mounted radar, there were limitations in the capabilities of early sets, and it was easy for task group commanders to be overwhelmed with information provided by radar, visual sightings, and that which was transmitted by other ships. The problem was particularly acute at night when it was compounded by a lack of effective night-fighting doctrine. During the naval battles surrounding Guadalcanal in late 1942, the Japanese took

¹⁶⁵ Adams. *Great Pacific War*. 110.

¹⁶⁶ Ibid. 369. This error on the part of the Japanese mirrors their failure to target U.S. fuel tanks at Pearl Harbor, which would have had an equally devastating effect on the ability of the U.S. Navy to operate.

¹⁶⁷ James D. Hornfischer. *Neptune's Inferno: The U.S. Navy at Guadalcanal*. Bantam: New York. 2011; 427.

¹⁶⁸ Hone. *Learning War*. 184.

advantage of these problems to devastating effect, sinking numerous U.S. and Allied warships. The Americans were unprepared for the ferocity, surprise, or close range of nighttime littoral combat. The U.S. Navy had to adapt quickly to these challenges or face further catastrophe. It more widely deployed updated radars, established common fighting doctrine and developed the Combat Information Center or CIC. The CIC's purpose was to "redistribute cognitive workload," providing a clearer picture to the commander which would give him a more accurate picture of the battle, enabling him to make better decisions and more effectively fight his ships.¹⁶⁹

Development of the CIC was game-changing for the Navy. Modern war complicated the information picture, which was more important than ever in naval combat. The CIC allowed the commanders to more quickly process relevant information and make effective decisions. The Navy demonstrated that it had learned its lessons when it decimated the IJN battle force in a ferocious nighttime ambush in Surigao Strait during the October 1944 Battle of Leyte Gulf after making effective use of such innovation.¹⁷⁰

By the end of the war, the U.S. Navy was made up of some 6,000 ships and was larger than all other navies combined. The Navy had made enormous technological leaps in all facets of naval warfare, deploying multiple iterations of improved ships and aircraft during the war. The Navy invested heavily in personnel and training, never suffering the critical shortages of trained personnel, such as airmen, as did the IJN. The Navy not only

¹⁶⁹ Ibid. 208-209.

¹⁷⁰ James D. Hornfischer. *The Last Stand of the Tin Can Sailors: The Extraordinary World War II Story of the U.S. Navy's Finest Hour*. Bantam Books: New York. 2004; 105-114. It should be noted that this is the same action where the five battleships sunk at Pearl Harbor played a critical role in demolishing the enemy task force.

sustained and replenished losses across two oceans and two theatres of war, but continually upgraded at a rate with which neither the Germans nor Japanese could compete. This success was enabled by the foresight of those both within and without the Navy who paved the way for such rapid development.

The Strategy

U.S. national strategy during WWII prioritized the defeat of Nazi Germany over Japan. It had been set before the U.S. entered the war with the agreement between the U.S. and Britain in early 1941.¹⁷¹ As a result, American sailors already found themselves engaged in combat with German U-boats in the Atlantic during the months prior to Pearl Harbor.¹⁷²

Once war broke out in the Pacific with the series of Japanese surprise attacks, including Pearl Harbor, maintaining a strict “Germany first” focus became more difficult. Admiral Ernest J. King, Chief of Naval Operations (CNO) and Commander-in-Chief of the U.S. Fleet, was the senior naval commander of the war and he favored prioritizing the defeat of Japan. In addition to pressure from the Navy, political realities and Roosevelt’s desire for broad, bipartisan support of the war (Republicans strongly favored aggressive prosecution of the war against Japan) muddled the strategic waters. While “Germany first” remained the official position of the U.S. government, the U.S. Navy and Marine Corps were given broad latitude and support in taking the fight to the Japanese.¹⁷³

¹⁷¹ Louis Morton. “Germany First: The Basic Concept of Allied Strategy in World War II.” *U.S. Army Center of Military History*. (date unk.) https://history.army.mil/books/70-7_01.htm. 41-47.

¹⁷² The destroyer *U.S.S. Reuben James* was the first ship lost to enemy action in the war after it was torpedoed by a German U-boat on Oct. 31, 1941. See Borneman. *Admirals*. 201.

¹⁷³ Kurth, James. “The U.S. Navy in World War II.” *Foreign Policy Research Institute*. May 2, 2009. <https://www.fpri.org/article/2009/05/the-u-s-navy-in-world-war-ii/>. It should also be noted that the politically powerful Gen. Douglas MacArthur was given much support for a contemporaneous campaign lead by the U.S. Army and Army Air Force in the South Pacific.

King's regard of the Atlantic as a secondary theatre to the Pacific, at least as far as the Navy was concerned, had a detrimental effect on the Allied position in the Battle of the Atlantic.¹⁷⁴ As discussed in the previous chapter, the trans-Atlantic SLOC were the Allies' center of gravity in that theatre and King's initial inattention, committing insufficient resources and failing to institute appropriate tactics including convoy operations to combat the U-boat threat, resulted in the sinking of 567 merchant ships totaling 2.9 million gross registered tons with a loss of only 21 U-boats during the first half of 1942.¹⁷⁵ This was known in the *Kriegsmarine* as the "Second Happy Time."¹⁷⁶ It was not until Roosevelt pressured King to prioritize operations in the Atlantic, along with more ships coming down the ways and some timely technological innovations, that the tide was turned.¹⁷⁷

The stretching of scarce naval resources had been felt in the Pacific as well. As war drums beat in 1941, several U.S. carriers were deployed to the Atlantic, leaving the Pacific fleet inadequate to confront Japanese adventurism and the IJN. The Pacific Fleet had been moved to Pearl Harbor as a deterrent and forward deployed show of strength, however there was concern as to the effectiveness of this policy given the strength of the Pacific Fleet relative to the IJN. Some worried this could prove destabilizing or lead to war since Japan would see it as provocative or, given American unreadiness for war, the

¹⁷⁴ Adams. *Great Pacific War*. 94.

¹⁷⁵ Offley. *Turning the Tide*. 220.

¹⁷⁶ Stephen Budiansky. *Blackett's War: The Men Who Defeated the Nazi U-boats and Brought Science to the Art of Warfare*. Vintage Books: New York. 2013; 168-169.

¹⁷⁷ Ibid. 237-241.

Japanese might call the U.S. bluff.¹⁷⁸ A combination of these factors contributed to the Japanese decision to attack Pearl Harbor.¹⁷⁹

Once the war was joined, U.S. naval strategy in the Atlantic focused on protecting the SLOC and ensuring vital supplies and war materiel reached Britain, the U.S.S.R., and ultimately U.S. expeditionary forces in Africa and Europe. The U.S. eventually adopted the convoy system as their British allies had recommended. Scarce resources, including a shortage of ships and long-range patrol aircraft, forced the U.S. to adopt a defensive strategy of attempting to protect convoys from U-boat “wolf pack” attacks. While the convoy system helped minimize losses, this defensive posture was not sufficiently effective to secure Allied SLOC against *Kriegsmarine* predations. Technological advancements, the allocation of very-long-range B-24 Liberator bombers for ASW operations, and the deployment of large numbers of destroyers, destroyer escorts, and escort carriers enabled Allied naval forces to shift from a defensive to an offensive posture. Once the Allies fielded new, more capable centimeter wave radar, undetectable by the Germans, American and British sailors were able to deploy hunter-killer teams to hunt and sink U-boats, seizing the initiative from the Germans.¹⁸⁰ As Alfred Thayer Mahan observed, while defensive operations are sometimes necessary and protection of SLOC are vital, “success will certainly attend him who drives his adversary into the

¹⁷⁸ Wohlstetter. *Pearl Harbor*. 84-85.

¹⁷⁹ Adams. *Great Pacific War*. 52.

¹⁸⁰ Ed Offley. *Turning the Tide: How a Small Band of Allied Sailors Defeated the U-boats and Won the Battle of the Atlantic*. Basic Books: New York. 2011; 59-60.

position of the defensive and keeps him there.”¹⁸¹ Allied assumption of the offensive assured victory in the Atlantic.

In the Pacific, U.S. naval forces planned to seize the initiative against the IJN and go on offense as soon as possible. War Plan Orange, developed prior to the war as a result of naval planning and experimentation during two decades of Fleet Problems, called for a naval offensive across the central Pacific towards Japan. The object of the strategy was destruction of the IJN’s battle fleet in Mahanian fashion. Limitations on American operating range and logistical capabilities early in the war, however, necessitated establishing intermediate bases in the Marshalls and other islands. This required implementation of the Marine Corps’ operating concept of Advanced Base Force Operations. This consisted of the amphibious assault and occupation of certain Japanese-held islands for the establishment of intermediate U.S. bases. Ultimately, inter-service rivalries and competing political realities shifted the strategy from destruction of the enemy fleet and a direct route to Japan to one of dominating “large ocean areas via amphibious invasion.” This strategy was dominated by proponents of a fleet centered around the battleship rather than the carrier. Instead of focusing on fleet action in Mahanian terms, they sought a land campaign conducted by incremental seizure of key maritime terrain.¹⁸²

A strategic review of the various amphibious island campaigns shows mixed results. It was important for the U.S. to establish forward bases from which future operations could be staged, to prevent Japanese land-based aircraft from denying the

¹⁸¹ Alfred Thayer Mahan. “Considerations Governing the Dispositions of Navies.” May 1902. *21st Century Mahan: Sound Military Conclusions for the Modern Era*. Benjamin F. Armstrong, ed. Naval Institute Press: Annapolis. 2013; 50-51.

¹⁸² Adams. *Great Pacific War*. 26-33.

Navy freedom of maneuver in critical areas, to cut off Japanese SLOC vital to the supply of oil and war materiel, and to induce elements of the IJN to sortie for decisive battle. The Guadalcanal campaign came at a time when the Navy did not yet have the fleet to conduct long range operations through the central Pacific, as called for in War Plan Orange. The Japanese were threatening Australia's SLOC through the Solomon Islands, where the U.S. decided to meet them in battle. The resulting campaign, though costly, yielded valuable lessons while allowing the Navy to defeat elements of the Japanese surface force piecemeal in smaller engagements the Navy could handle at that time. Kwajalein, the Marianas, and Okinawa were critical campaigns which provided the U.S. important forward bases, allowed the reduction of Japanese land-based air power, and sat astride critical Japanese SLOC. U.S. strategists recognized the need to cut the north-south SLOC by taking either Formosa or Luzon in the Philippines, however political considerations led to the approval of Gen. MacArthur's Philippine campaign, which began with the invasion of Leyte and proved in many ways to be a costly diversion from other efforts. The invasions of Tarawa and Iwo Jima were of limited strategic value and were costly due to their heavy fortification by Japanese defenders. An important lesson is that, whenever possible, fortified locations should be bypassed and isolated, or reduced from the air, unless they possess key strategic value. Japanese ability to deny the U.S. the ability to operate in the waters adjacent to these islands could be diminished by preventing their resupply and destroying their land-based air wing. A good example of this was the Japanese stronghold of Truk. The U.S. was able to secure certain strategic anchorages and forward resupply bases, such as Ulithi, at low cost because they were lightly defended by the Japanese. The U.S. island hopping campaign is rightfully viewed

as a successful strategy, however it likely could have been conducted even more quickly and at less cost.¹⁸³

Although amphibious operations came to dominate the Pacific War, Admiral Nimitz did not hesitate to seek a decisive fleet action when the opportunity presented itself. The American success at Midway provided just such an opportunity. U.S. intelligence indicated that the IJN planned to lure out the U.S. battle fleet by attacking Midway and to establish a staging area in support of a Japanese invasion of Hawaii. Despite numerical inferiority of carriers and aircraft, Nimitz used his intelligence advantage to position his forces to catch the Japanese by surprise, making an effective first attack. In the ensuing battle, the Japanese lost four carriers and countless irreplaceable pilots to the loss of one American carrier, a resounding U.S. victory.¹⁸⁴

While the U.S. Navy achieved surprise at Midway, ultimately ensuring success, their likely presence was not entirely unknown by Japanese commanders. The approaching IJN task force had been split into two parts operating hundreds of miles apart. In an effort to ensure surprise, these forces operated under radio silence. Despite the fact that IJN fleet had been compromised after being sighted by a U.S. submarine, there was a failure to communicate the loss of surprise. This had catastrophic results during the battle and likely contributed to the decisive strike that crippled the IJN task force.¹⁸⁵ This illustrates one danger of operating under radio silence or emissions control

¹⁸³ Adams. *Great Pacific War*. 125-130, 394-398.

¹⁸⁴ Ibid. 112, 119-124.

¹⁸⁵ Ibid. 116-117, 120. The IJN task force was split into two parts. Admiral Nagumo and the aircraft carriers were several hundred miles in advance of the surface battle fleet and invasion force containing Admiral Yamamoto's flagship, the battleship *Yamato*. The *Yamato* had picked up a radio transmission from an American submarine which had spotted the Japanese task force. This and other intercepted U.S. naval radio transmissions indicated that the U.S. knew of the presence of the IJN fleet and would likely be positioned to intercept. Because the Japanese fleet had been under radio silence to avoid detection and

(EMCON), which can degrade communication and coordination amongst one's own forces.

The Japanese were not the only ones to suffer because of a communication failure. One such miscue cost the U.S. Navy five ships sunk and a near catastrophe off Samar in the Battle of Leyte Gulf in 1944. Admiral William F. Halsey left a critical choke point unguarded during the U.S. invasion of Leyte when he fell for a Japanese decoy task group. Halsey failed to communicate his pursuit of the IJN force, leaving his previous blocking position vacant. The main IJN battle force emerged through that position to set upon the invasion fleet and would have torn it to pieces if not for the courageous actions of a handful of destroyers, destroyer escorts, and escort carriers. Halsey's actions and failure to communicate has been a subject of controversy ever since.¹⁸⁶

location by U.S. forces, Yamamoto did not transmit this information or any warning to Admiral Nagumo, whom he had assumed was also aware of this information. Nagumo was not in fact aware, and catastrophe resulted when Nagumo's strike aircraft were caught on deck loading weapons when U.S. planes arrived overhead. The failure to ensure his subordinate commander shared his situational awareness and understood the appropriate course of action cost Yamamoto and the IJN four aircraft carriers.

¹⁸⁶ Halsey's TF34 was supposed to occupy a position blocking the San Bernadino Strait from any IJN approach through the strait towards the U.S. landing beaches at Leyte. IJN Admiral Ozawa steamed from the north with several aircraft carriers, minus their airwings, as a decoy to draw naval forces away from the landing zone, opening them up for an attack by the main Japanese surface fleet. Halsey took the bait and sailed north to attack Ozawa, but failed to communicate his intentions, or the fact that he had left no forces behind to secure the straight. The main IJN battlefleet under Admiral Kurita, including the battleship *Yamato*, steamed through the strait. The destroyers, destroyer escorts, and escort carriers of *Taffy 3* overcame incredible odds to turn back the Japanese force. During the action, Nimitz sent Halsey the message "Where is TF34?" which was controversial in its own right due to the idiosyncrasies of the padding included with the transmission to encrypt it. With the padding, the message read, "TURKEY TROTS TO WATER GG FROM CINCPAC ACTION COM THIRD FLEET INFO COMINCH CTF SEVENTY-SEVEN X WHERE IS RPT WHERE IS TASK FORCE THIRTY FOUR RR THE WORLD WONDERS". The message itself caused Halsey angst and likely contributed to a delayed reaction by the force. James D. Hornfischer. *The Fleet at Flood Tide: America at Total War in the Pacific 1944-1945*. Bantam Books: New York. 2016; 356. and Andrew Hamilton. "Where is Task Force Thirty-Four?" *U.S. Naval Institute Proceedings*. 1960. 86(10). <https://www.usni.org/magazines/proceedings/1960/october/where-task-force-thirty-four>.

Despite the general naval objective of forcing a decisive fleet action, dispersal of American naval strength into smaller task groups often inhibited this ability and left the smaller task groups vulnerable to defeat in detail by a larger IJN force. These task groups would come together when Nimitz wished to concentrate naval forces, however integrating ships and commanders who had been operating separately presented coordination and communication difficulties during ensuing combat. Over the course of the war, the Navy established and promulgated standardized doctrine to minimize these problems and ensure that any commander could reasonably understand how he was expected to proceed and how other commanders were likely to act in battle. This helped minimize friction from communication miscues in combat.¹⁸⁷

One last critical element of American naval strategy in the Pacific was the submarine campaign against Japanese shipping. Both the Japanese home islands and Japanese expeditionary forces on islands throughout the Pacific relied upon logistic ships to supply men and materiel as well as vital fuel oil. U.S. submarines waged a relentless *guerre de course*, targeting Japanese merchant shipping. This campaign was highly effective and sent approximately 8.1 million tons of shipping to the bottom.¹⁸⁸ This strangled the IJN's supply of oil, restricted Japanese ability to supply and reinforce their troops holding islands against American assault, and strained life in the homeland.¹⁸⁹ In contrast to the Battle of the Atlantic, where the Allies ultimately secured their SLOC, this campaign illustrates how failure to maintain one's SLOC and maritime logistics capability can diminish the ability to wage war abroad. This resulted in a massive

¹⁸⁷ Hone. *Learning War*. 256.

¹⁸⁸ McMahon, Christopher J. "Maritime trade warfare: A strategy for the twenty-first century?" *Naval War College Review*. 2017; 70(3):20.

¹⁸⁹ Hanson. *Second World Wars*. 188-190.

imbalance in the logistical backbone essential to expeditionary operations between the U.S. and Japan and was a major contributor to U.S. victory.

Analysis

In summary, there are many lessons to be drawn from this brief examination of the U.S. Navy in WWII. To start, the Navy began the war with a fleet which was too small to achieve its national strategic objectives. Fortunately, prescience and political will before the war committed enough funding to set the Navy on the right path for growth, funding massive naval construction. This increased the number of ships and ensured there were enough shipyards, repair yards, drydocks, and skilled workers to build and repair an unprecedented number of warships. These yards were critical to quickly repair battle damage and keep ships fighting. The lack of this capability would likely have cost the Navy some victories in battle and prolonged the shift in the balance of naval power in the Pacific from Japan to the U.S.

Sheer numbers were critical to success, especially in the vastness of the Pacific. The power of American industry put an incredible number of warships in the water. This allowed the Navy to concentrate its combat power, allowing it to fight on its own terms, where and when it chose. Early in the war, U.S. options were much more limited, resulting in peripheral campaigns such as the Solomon Islands, where the Navy was able to draw out the IJN without risking its few remaining carriers. As the fleet grew, it became able to seek out battle with the main Japanese fleet and seize key terrain in the central Pacific as called for in War Plan Orange.

Sufficient numbers of ships also allowed commanders to risk the loss of some ships to accomplish their objectives. One reason Nimitz was able to take risks early in

the war was the knowledge that more and increasingly powerful ships were already under construction and would be delivered soon. Ships are sunk in naval combat. Commanders must be willing to accept that risk when necessary to achieve strategic objectives. There were several engagements in the Pacific War, such as the Battle of the Coral Sea, where the U.S. lost valuable ships and failed to achieve a tactical naval victory but, more importantly, accomplished larger strategic objectives key to the overall war effort.

Diversity and versatility in fleet composition was also critical, enabling a combined arms approach, with carriers and their embarked air wings as the driving force behind fleet operations. The carriers were supported by battleships, heavy and light cruisers, destroyers, destroyer escorts, submarines, and a host of invaluable logistics vessels including transports, amphibious ships, oilers, tenders, tankers, and cargo ships. The battleship, which some had considered obsolete, continued to have a critical role in surface warfare and provided naval gunfire support to forces ashore.

Naval warfare is inherently technologically driven and WWII was no exception. American naval innovation and the development of corresponding doctrine were critical to success. While there were early failures and missteps, the U.S. Navy had established itself long before the war as a “complex adaptive system” with a decentralized approach to innovation that enabled it to learn from its mistakes and develop and implement solutions across the fleet.¹⁹⁰ Doctrine was critical in enabling the successful concentration of distributed naval forces into large task forces to decisively engage Japanese forces. Distributed operations, however, exposed the fleet to the danger of being divided, resulting in the possibility of defeat in detail at the hands of a larger, more

¹⁹⁰ Hone. *Learning War*. 1-4.

concentrated naval force. Overwhelming force at the decisive time and location have been critical to success in naval combat throughout history and WWII was no exception. Multi-carrier operations were the rule whenever possible and allowed the U.S. Navy to get within the A2AD umbrella of Japanese land-based air cover. When combined, the U.S. fleet was virtually unstoppable.

The evolution of technology and dispersed operations also illustrated the increasing importance of information and communication in combat. If not properly triaged, information could easily overwhelm a commander and a failure to communicate with one's subordinates or fellow commanders could result in critical errors and disaster, a problem which could be especially acute when under radio silence. The attack on Pearl Harbor brought to the fore the debate on whether a forward deployed naval force of limited strength serves as a deterrent or a vulnerable provocation. The war previewed operating concepts in consideration for use by U.S. naval forces today, including Expeditionary Advance Base Operations and Distributed Maritime Operations. While these concepts proved successful, they must be considered in light of the overwhelming naval strength the U.S. brought to the Pacific War.

Finally, from a strategic perspective, the Navy benefited greatly from its efforts during the interwar years. The Navy conducted major Fleet Problems on an annual basis, wargaming various strategies and scenarios, typically involving a war with Japan. One of the results of the Fleet Problems and other strategic efforts was War Plan Orange, which called for the Navy to advance across the central Pacific, through the Marianas, for a decisive battle with the Japanese Fleet. Then the U.S. would be free to retake the Philippines and assault Japan. War Plan Orange did provide a strategic template for the

Navy during the war, however limited resources early on, the desire for additional intermediate bases, and a divided command with Gen. MacArthur running his own southwest Pacific strategy resulted in some strategic detours and costly blunders. Additionally, the U.S. successfully targeted Japanese supply lines, cutting off the flow of oil, materiel, and food, starving the Japanese war machine of the fuel and resources it needed.

For their part, the Japanese envisioned the U.S. strategy to steam across the Pacific towards Japan, engaging the IJN along the way. The Japanese realized that they would have a limited period of strategic opportunity and superiority of forces at the outset of the war. The Japanese planned to deliver a major strike against the U.S. Pacific Fleet, secure their SLOC to the vital oil and resources of the East Indies, and establish a maritime defensive perimeter. The Japanese, from a position of strength, would seek a negotiated settlement with the U.S. before American industrial might could tip the balance. However, a series of tactical and strategic failures handicapped the Japanese efforts. Failure to target U.S. fuel supplies, logistics facilities and logistics ships, as well as strategic detours and periods of inaction resulted in the overall failure of the Japanese strategic plan. While the Japanese may never have obtained their strategic objective of forcing the U.S. to a negotiated settlement, its operational failures prevented it from achieving their overall strategic military objectives.

Ultimately, the U.S. won because it had the better strategy, superior industrial might, more robust logistics capability, more numerous and more capable fleet, more advanced technology better leadership, and by the end of the war, better trained sailors. Japanese superiority in some of these areas at the beginning of the war was ephemeral

and they lacked an ultimate plan for victory. Growing American superiority in each of these areas allowed the Navy to recover from its losses, endure costly strategic and tactical blunders, and achieve victory against a tenacious and skilled opponent. Despite these advantages, victory came at a high cost in blood and treasure. These advantages were not a given and, had they not been fully exploited by the U.S., the costs would have been even higher.

Case Study - 1980s Cold War

The Cold War was not primarily a naval conflict and for much of the early Cold War the Soviet navy posed no real threat to the U.S. Navy. After being embarrassed during the Cuban Missile Crisis by their inability to counteract the American imposed quarantine, the Soviets, under navy commander-in-chief Admiral Sergei Gorshkov, built a blue-water fleet capable of opposing the U.S. Navy.¹⁹¹ The Transoceanic Phase of U.S. naval policy written about by Samuel Huntington in 1954 was soon to be replaced by a resurgence of the Oceanic Phase given the renewed Soviet naval threat at sea.¹⁹² A drawdown of the U.S. fleet following the Vietnam War left American deterrence deteriorating and Soviet naval capability approaching numerical and technological parity with that of the U.S.¹⁹³ This would all change with the 1980 election of Ronald Reagan as President of the United States. This case examines how the U.S. Maritime Strategy and a rebuilt U.S. Navy helped to end the Cold War against a great power competitor

¹⁹¹ Ronald J. Kurth. "Gorshkov's Gambit." *Journal of Strategic Studies*. 2005. 28(2); 261-280.

¹⁹² Samuel P. Huntington. "National Policy and the Transoceanic Navy." *U.S. Naval Institute Proceedings*. 1954; 80(5).

¹⁹³ John Lehman. *Oceans Ventured: Winning the Cold War at Sea*. W.W. Norton & Co.: New York. 2018; 32, 47-63.

while simultaneously handling a regional hot war in the Arabian Gulf. This case adds to the study of WWII by examining naval strategy and operations in the modern era of missiles, satellites, and modern sensors and weapons.

The Threat

The U.S.S.R was the single primary threat during the Cold War around which all U.S. national security and defense policy revolved. Unlike American enemies during WWII, the Soviets possessed both massive conventional forces and a massive nuclear arsenal. The Soviets were a continental power whose land forces, massed in Eastern Europe, far outnumbered those of NATO. Admiral Gorshkov had overseen the construction of an advanced Soviet navy with a global reach including an aircraft carrier, a robust submarine fleet composed of both attack and ballistic missile submarines, and a host of powerful surface ships.

The U.S. Navy had lost its naval superiority by the late 1970's, with Soviets possessing nearly three times the number of ships as the U.S. Even though the U.S. maintained a technological edge, this change in the balance of naval power alarmed naval leaders.¹⁹⁴ In the event of war, the Soviets were capable of threatening and possibly cutting off the Atlantic SLOC which would be vital to reinforcing and supplying NATO forces in Europe. Such action would cripple the U.S. and NATO war effort. The Soviet fleet had become capable of challenging the U.S. Navy anywhere in the world, from the Atlantic and Pacific to the Mediterranean, Indian Ocean, and even the Western Hemisphere.¹⁹⁵ Despite its global reach and ability to counter the U.S. if desired, Soviet

¹⁹⁴ Kurth. "Gorshkov's Gambit."

¹⁹⁵ Lehman. *Oceans Ventured*. 133, 34.

naval strategy took a back seat to land and nuclear strategy. Ultimately, Soviet naval strategy centered primarily on sea control in its adjacent waters and sea denial in waters from which the U.S. could launch naval strikes. In the event of war, Soviet naval forces would focus on defending against U.S. aircraft carriers and ballistic missile submarines instead of taking an offensive position.¹⁹⁶

The Fleet

The 1970's U.S. Navy had fallen a long way since the end of WWII. From a peak of over 6,000 ships, including over 800 surface warships and 100 aircraft carriers at the end of the war, the fleet had fallen to just 523 ships, including 182 surface warships and 13 aircraft carriers in 1977.¹⁹⁷ The Navy's diminished state resulted from several factors. After WWII, as the most powerful navy in the world with no real opposition, the U.S. Navy had no serious threat around which to focus its efforts or drive budget requests. The fleet aged as new ships were not brought on-line to replace ageing hulls. The U.S. Air Force had sought to be the preeminent deterrent force to the U.S.S.R., obviating in its view the need for a Navy. This was coupled with the lack of a credible strategy to defeat the Soviets in a conventional war without escalating to nuclear weapons. During the war in Vietnam, the high operational tempo of providing continuous strike support to U.S. forces ashore depleted limited naval resources. Finally, the Navy had lost its offensive mindset and emphasis on strategic thinking.¹⁹⁸

¹⁹⁶ Central Intelligence Agency. *Soviet Navy: Intelligence and Analysis During the Cold War*. 1992; 16. <https://www.cia.gov/library/publications/intelligence-history/soviet-navy-cold-war/soviet-navy-historical.pdf>.

¹⁹⁷ "U.S. Ship Force Levels 1886-Present." *Naval History and Heritage Command*. Nov. 17, 2017. <https://www.history.navy.mil/research/histories/ship-histories/us-ship-force-levels.html>.

¹⁹⁸ Mackubin Thomas Owens. "The Necessary Navy." *National Review*. 2018. 70(12); 41-42.

While the Navy had suffered from budget shortfalls and degraded capabilities over the preceding years, naval and defense leaders had been pursuing development of new and advanced weapons and systems. Much like Carl Vinson's championing of naval construction prior to WWII had set up the Navy for success during that war, the Navy was to benefit during the 1980's from the foresight and support of these defense officials throughout the 1970s. With the incoming Reagan Administration in 1981, the political winds had shifted allowing these mature or nearly mature programs to be funded for deployment across the fleet. Such innovations included advanced submarines, surface ships, sensors, missiles, aircraft, and other systems which greatly increased the Navy's edge over the Soviets. The Navy also brought the four *Iowa* class fast battleships out of mothballs and returned them to active service.¹⁹⁹ Far from being obsolete, these battleships were modernized and provided not only prestige and presence to the fleet, but unmatched naval gunfire support to forces ashore. The addition of all of these capabilities gave serious teeth to the Administration's new Maritime Strategy.

At the center of the Navy's offensive power was the carrier battle group (CVBG). The Navy had been reorganized into a battle force fleet concept around these CVBG's by CNO Admiral L. Holloway III in the late 1970's.²⁰⁰ These groups were centered around the aircraft carrier, with a diverse airwing of approximately 80 aircraft including long-range fighter/interceptors for air defense and establishing local air superiority, electronic warfare aircraft, strike aircraft, airborne early warning aircraft, anti-submarine aircraft, and others. Most of these aircraft were capable of long-range operations, giving the

¹⁹⁹ Lehman. *Oceans Ventured*. 93-96, 115-116.

²⁰⁰ Edward J. Marolda. "A Strong Hand on the Helm." *Naval History*. April 2020. 34(4); 22.

CVBG extended stand-off range. Surrounding the carrier were typically two cruisers and four destroyers for anti-air and anti-surface defense, frigates for ASW defense, a fast attack submarine for anti-surface and ASW defense, and a logistics ship. The CVBG was capable of multi-domain battle, in the air, at sea, or striking targets on land, and was a powerful instrument of national policy.²⁰¹ During the 1980's, the Navy increased to fifteen CVBGs and also employed four surface action groups (SAG) built around the *Iowa* class battleships.²⁰² The diversity of ships making up the surface fleet, including several different classes of carrier, cruiser, destroyer, frigate, submarine, as well as the battleships, gave the fleet significant flexibility and allowed the Navy to put to sea specialized, highly-skilled ASW, mine warfare, and other specialty ships. The increased number of ships also gave the fleet flexibility to maintain persistent presence, surge additional forces where needed, and simultaneously conduct missions and operations in multiple locations around the world. Additionally, the Navy frequently exercised multiple CVBGs together as in WWII, relearning how to conduct large-scale fleet action and dramatically increasing their power projection capability through these joint operations.²⁰³

Modern technology had significantly changed the character of naval warfare since WWII. Precision guided missiles, including the long-range Tomahawk missile, significantly increased both the range and accuracy of U.S. forces. U.S. battleships could now strike and destroy targets hundreds of miles away.²⁰⁴ Anti-air and anti-ship missiles

²⁰¹ James Holmes. "Why It's Time for the Carrier Battle Group." *National Interest*. July 4, 2017. <https://nationalinterest.org/blog/the-buzz/why-its-time-the-carrier-battle-group-21404>.

²⁰² Lehman. *Oceans Ventured*. 282.

²⁰³ Ibid. 108-112.

²⁰⁴ Ibid. 95, 115.

rounded out the inventory, giving the carrier air wings and surface ships robust offensive and defensive capabilities in those areas as well. New and highly advanced radars and other sensors such as the ship-based Aegis system and airborne radars like those mounted on the E-2 *Hawkeye* provided unmatched sensing capability and an incredible amount of data to commanders.²⁰⁵ Satellite reconnaissance also enhanced the ability of U.S. naval forces to surveil and monitor Soviet naval and other forces. While these sensors pushed scouting range out by orders of magnitude, adversaries also enjoyed extended surveillance and engagement ranges. Target identification could be problematic however at extended range, all the while missile speed of flight shortened engagement times. This could present problems for commanders operating in contested littoral waters, where busy sea lanes and air corridors are filled with both friendly and enemy units as well as civilian shipping and air traffic. Identification of friend or foe and making timely and appropriate engagement decisions in such environments was an extremely complex task.

This had the potential to lead to catastrophe, as dramatically illustrated during the 1987-1988 Tanker War in the Arabian Gulf. The frigate *USS Stark* was on patrol in the Gulf when it was struck by two missiles from a supposedly friendly Iraqi aircraft, which had reportedly misidentified the *Stark*. Only the heroic damage control efforts of her crew saved her from going to the bottom.²⁰⁶ Over a year later, the Aegis equipped guided

²⁰⁵ Lee Allen Zatarain. *America's First Clash With Iran: The Tanker War, 1987-88*. Casemate: Phila. 2010; 89.

²⁰⁶ Ibid. 7-25, 41-52. In May 1987, *USS Stark* had been operating in the Arabian Gulf during the evening when a U.S. Air Force airborne early warning radar detected an incoming Iraqi Mirage fighter and communicated this to *Stark*. Iraq and the U.S. were on friendly terms at the time and the Iraqi aircraft was assumed to be on a mission to strike Iranian shipping. *Stark* was operating in a condition of relaxed readiness as the aircraft approached the *Stark* on a threatening strike profile. Efforts to communicate with the aircraft and radar lock onto it as a warning were too late. The Mirage launched two Exocet anti-ship missiles. The *Stark's* close-in weapons systems were not activated to intercept them. The *Stark* was struck twice and nearly sank. Iraq apologized and claimed it had misidentified *Stark* as an Iranian ship. Complacency and an accelerated decision cycle on the *Stark* had nearly doomed it to being sunk. The

missile cruiser *USS Vincennes*, also operating in the Gulf, was in an ongoing surface engagement with multiple Iranian fast attack craft when its radar detected an inbound aircraft. A variety of factors including conflicting indicators, miscommunication, and information overload resulted in the *Vincennes* classifying the aircraft as hostile and shooting it down with a surface to air missile. Tragically, the aircraft was an Iranian civilian airliner with 290 people aboard, all of whom were killed.²⁰⁷ Even the advent of modern technology could not prevent the fog of war and the detrimental effects it can have on naval and military operations.

The Strategy

Prior to the Reagan Administration, U.S. national strategy in the Cold War had evolved into one of détente and disarmament.²⁰⁸ The election of President Reagan in 1980 brought about a profound shift in U.S. grand strategy. Reagan sought not merely peaceful coexistence, but the triumph of liberal democracy and defeat of the Soviet Union. One critical component of this strategy was a build-up of American military and naval power.²⁰⁹ Thus began the Maritime Strategy. The blueprint of the Strategy was

Stark's commanding officer (CO), Captain Eric Brindel was found to be responsible, under the Navy's philosophy of command responsibility. He was recommended for court martial but was allowed to retire with a reduction in rank.

²⁰⁷ Ibid. 297-314, 321-322. The actions of the *Vincennes* throughout the engagement were highly controversial. It had pursued an aggressive surface action against Iranian small craft, despite being a thinly armored warship designed for air defense, and one of the most complex, advanced, and expensive in the fleet. This area of the Arabian Gulf was in the middle of busy civilian shipping and air traffic lanes. The *Vincennes* was tracking multiple air contacts including an Iranian P-3 surveillance aircraft. Radio and electronic deconfliction efforts with the airliner failed or were confused, leading to the misidentification of Iran Air 655 as an F-14 fighter aircraft. Information overload and a frenetic environment in the *Vincennes* CIC lead to a misidentification of Flight 655's flight path as an attack profile. *Vincennes* engaged with a surface to air missile at 10 nm, downing the aircraft. Unlike the CO of the *Stark*, Captain Will Rogers, CO of the *Vincennes*, was not found to be responsible and was absolved of responsibility in the ensuing investigation.

²⁰⁸ Lehman. *Oceans Ventured*. 43.

²⁰⁹ Robert C. Rowland and John M. Jones. "Reagan's Strategy for the Cold War and the Evil Empire Address." *Rhetoric & Public Affairs*. 2016. 19(3); 427-463.

CNO Holloway's *Sea Plan* 2000, developed in the late 1970s but left unimplemented by the Carter Administration, which advocated a two-ocean approach to countering Soviet military power.²¹⁰ Components of the Maritime Strategy began to be implemented under Secretary of the Navy John Lehman almost immediately after Reagan took office in 1981. However, it was not formally and publicly announced until a January 1986 article by the CNO in a special issue of the *U.S. Naval Institute Proceedings*.²¹¹

There were three components to the Maritime Strategy: deterrence, forward defense, and alliance solidarity. The Strategy sought to restore credibility to U.S. naval deterrence capability and was designed to be joint in nature, closely cooperating with all of the other services. It also relied heavily on combined operations with NATO and other U.S. allies. The Strategy was designed for a period of what the CNO termed, "violent peace," of widespread localized conflicts and crises with global implications. It was critical that the Navy be postured to contain such crises and prevent escalation into wider conflict. In order to do this, the Navy had to remain forward deployed around the world, near potential and ongoing crises in the Indian Ocean, Arabian Gulf, Caribbean, Mediterranean, and Western Pacific. These requirements pushed the Navy operating tempo 20% higher than it was during the Vietnam War. Crisis response was thus a critical component of the strategy.²¹²

Despite the increasingly global capability of the Soviet navy, the Maritime Strategy recognized that in the event of war, the Soviet fleet would likely operate closer to home to protect the homeland and their ballistic missile submarines. The waters near

²¹⁰ Marolda. "Strong Hand". 22.

²¹¹ Lehman. *Oceans Ventured*. 177-178.

²¹² James D. Watkins. "The Maritime Strategy." *U.S. Naval Institute Proceedings*. 1986. 112(1); Supplement – The Maritime Strategy.

the U.S.S.R. where the Soviet navy would concentrate were also near critical U.S. allies, such as Japan, Norway, and Turkey. The U.S. Navy would therefore need to be able to fight in such forward areas to defend those allies. The Strategy also assumed Soviet wartime strategy would revolve around a massive combined arms assault against Western Europe. The Strategy envisioned that the U.S. Navy would help to deter such an attack and, in the event of war, would allow the U.S. to seize the initiative and take the fight to the Soviets at the places and times of Western choosing through the strategic maneuver afforded by sea power. The Strategy closely considered not only the capability of forward deployed naval forces but deployment and transit times required to surge additional forces. Depending on the part of the globe naval forces were needed, it could take weeks to get those forces into position if forward deployed units were not already located closer to the action.²¹³

Forward deployed naval forces therefore had to be prepared to win the “battle of the first salvo,” before additional reinforcements could arrive. The flexibility and maneuverability afforded by U.S. and allied naval forces would then strike Soviet forces in various places, forcing them to disperse ground and naval forces to meet the threat, thus blunting the likely Soviet main effort of massed armored divisions pouring through the Fulda Gap. The U.S. saw NATO and other allied naval forces as a critical part of this strategy, further multiplying the effect of U.S. attacks on multiple axes. The U.S. would press its advantage to destroy the Soviet fleet, including its ballistic submarines, by exploiting its significant technological advantage in undersea warfare. This would compromise the Soviet ability to launch a nuclear strike while simultaneously forcing the

²¹³ Ibid.

Soviets to fight a war on U.S. and Western terms. Upon destroying the Soviet fleet, allied naval forces would influence events on land to help bring the war to a conclusion on “acceptable terms.”²¹⁴

The Maritime Strategy was not merely words on paper. The U.S. Navy vigorously put it into practice by putting to sea new ships and capabilities and through a series of exercises designed to test the Strategy, enhance capability, and demonstrate to the Soviets that the U.S. had reestablished naval superiority and could utilize allied naval forces effectively to successfully accomplish its objectives.²¹⁵ The Navy’s strategic lethargy and defensive mindset had been replaced by an aggressive, offensive, forward-leaning attitude. Throughout the 1980’s, the Navy exercised its capabilities in ways virtually unheard of since WWII. Exercises were conducted jointly with the Marines, Army and Air Force as well as combined with NATO and other allied naval forces, ensuring cooperation between the services and among allies.²¹⁶ These exercises also provided real-world learning laboratories where the Navy could gauge its operations against Soviet forces sent to shadow or intercept friendly forces engaged in the exercises. This helped to validate doctrine, tactics, and technology. U.S. naval forces exercised with increasing frequency around the globe, including in Arctic waters just offshore of the Soviet Union, relearning lessons of extreme cold weather operations. The Navy also conducted multi-carrier operations and large-scale exercises in multiple theatres simultaneously, developing and enhancing its operating capabilities. This put extreme

²¹⁴ Ibid.

²¹⁵ Lehman. *Oceans Ventured*. 108.

²¹⁶ Jacob Børresen. “Alliance Naval Strategies and Norway in the Final Years of the Cold War.” *Naval War College Review*. Spring 2011. 64(2); 97-116.

pressure on the Soviets, who could not keep up and felt surrounded and pressured on all fronts by the U.S. Navy.²¹⁷

These exercises also provided tactical lessons about operations in the modern era of advanced sensors and global surveillance satellites. Today's questions about the viability of the aircraft carrier are not new, having been voiced during the Cold War, when some thought such surveillance and long-range missiles rendered them so vulnerable as to make them obsolete.²¹⁸ The Navy demonstrated that the carrier could in fact be an effective offensive weapon in the era of modern war, especially when operated in multi-carrier task forces. The Navy repeatedly and successfully used deception techniques to mask their operations. Such techniques included instituting strict EMCON procedures, employing decoy ships using radio and other transmissions to simulate CVBG operations and create "ghost" fleets, using the cover of weather to hide actual CVBGs, dispersing forces across a large area, and using littoral terrain such as Norwegian fjords to hide CVBGs during operations in northern Europe and close to Soviet airspace. The Soviets were repeatedly surprised or unable to locate U.S. carrier forces during these exercises because of these techniques. This frustrated Soviet scouting and targeting efforts and would have given the U.S. the opportunity to launch offensive strikes before the Soviets could counter them, an essential component to victory at sea.²¹⁹

The Navy demonstrated its capabilities in real-world battle conditions in the largest naval engagement since WWII. Operation Praying Mantis, the April 1988 U.S.

²¹⁷ Lehman. *Oceans Ventured*. 108-109, 112, 153, 158, 236-238.

²¹⁸ Ibid. 53. See also: Laurence B. Green. "A Case for the Attack Carrier in the Missile Age." *U.S. Naval Institute Proceedings*. 1958. 84(7). and Wynn V. Whidden. "The Case for the Carrier." *U.S. Naval Institute Proceedings*. 1971. 97(7).

²¹⁹ Lehman. *Oceans Ventured*. 38, 70-71, 78-79, 188-189, 195.

response to the near sinking of the frigate *USS Samuel B. Roberts*²²⁰ by an Iranian mine, showcased the power and capability of the U.S. Navy. Electronically-based weapons systems, anti-air and anti-ship missiles, integration of joint forces, and combined arms were demonstrated in combat conditions to perform as advertised.²²¹ As previously mentioned, however, modern warfare was not without its perils, as demonstrated by the previously discussed *Stark* and *Vincennes* incidents. Nevertheless, the Navy had established itself once again as the dominant naval force in the world. By this time, the Cold War was nearly over, due largely to U.S. grand strategy and in some part to the Maritime Strategy's role in furthering President Reagan's policy objectives.

The era concluded with Operations Desert Shield and Desert Storm and the 1991 Gulf War. American dominance of the sea enabled the unfettered transportation of personnel, supplies, and war materiel to the theater of operations over a period of months, allowing the U.S. to deploy overwhelming force prior to giving battle. Once hostilities began, U.S. warships contributed significant striking power via carrier launched air strikes, battleship-delivered naval gunfire support, and *Tomahawk* land attack missiles launched from battleships, cruisers, destroyers, and submarines. Naval surface and amphibious forces also provided Coalition forces on land room to maneuver through the threat of amphibious landing by a decoy force off-shore.²²² While the Iraq War demonstrated the U.S.' unprecedented technological superiority and ability to wage war

²²⁰ Of note, the frigate *USS Samuel B. Roberts* in this incident bore the name of one of the heroic destroyer escorts sunk during *Taffy 3*'s action at Leyte Gulf in 1944, where an inferior force heroically held off a large Japanese surface action group.

²²¹ Craig Symonds. *Decision At Sea: Five Naval Battles That Shaped American History*. Oxford: NY. 2005; 317-20.

²²² "U.S. Navy in Desert Shield/Desert Storm: 'Thunder and Lightning' – The War with Iraq." *Naval History and Heritage Command*. March 2, 2015. <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/u/us-navy-in-desert-shield-desert-storm/the-war-with-iraq.html>.

on its own terms at low cost in casualties, this resounding victory may have sown the seeds of subsequent U.S. maritime and technological decline along with the rise of advanced competitors. The U.S. set the benchmark for waging modern high-end war, providing lessons for other states who would ultimately seek the capability to beat the U.S. at its own game through technological innovation and A2AD systems which could prevent the U.S. from gradually building up and deploying overwhelming force in a long run-up to war. Meanwhile, the Navy became overly reliant on technological dominance and the ability to operate unfettered by hostile forces.²²³ The U.S. would enjoy the fruits of its victory for the remainder of the decade, but as the next chapter will illustrate, American dominance at sea was ephemeral.

Analysis

There are several lessons to be gleaned from this case study. The first is that naval power is inherently offensive. In order to be an effective instrument of national policy, naval power must be capable of demonstrating and projecting power abroad. Naval power can secure freedom of maneuver, enabling expeditionary forces to challenge an adversary at a place and time of their choosing, bypassing strong points on land, and effecting ground combat operations through its inherent flexibility. When considering naval power, numbers matter. Combat ships, support ships, aircraft, personnel, munitions, shipyards, and other critical components must exist in numbers sufficient to project power and withstand the rigors of combat, to include the reality of attrition. There must be enough hulls in the water to enable offensive naval operations. For the

²²³ Daniel Matthews. "Learning from Victory: America, Allies, Partners, and Competitors in the Persian Gulf War." *U.S. Naval Institute Blog*. Oct. 28, 2019. <https://blog.usni.org/posts/2019/10/28/learning-from-victory-america-allies-partners-and-competitors-in-the-persian-gulf-war>.

United States, with interests and security concerns around the globe, it needs to be able to conduct operations simultaneously in multiple theatres or, at a minimum, maintain a sufficient presence or deterrent force in locations other than the main theatre of action. Having enough aircraft carriers can enable multi-carrier operations, which have historically been the most potent and most survivable implement of naval power. Multi-carrier operations significantly increase the odds of success in battle and the achievement of strategic objectives.

Likewise, having a diverse array of ships in the fleet, to include carriers, battleships, guided missile cruisers, guided missile destroyers, frigates, and attack submarines, allows a combined arms approach. Diverse airwings maximize the offensive and defensive capability of carrier strike groups. Specialty vessels, such as mine clearance vessels, can mitigate risk to the fleet while oilers, tenders, and supply ships can keep the fleet at sea and in the fight. Another key lesson is that even in an age of satellite reconnaissance and modern sensors, naval fleets can use deception, near-shore terrain, weather, and the vast expanse of ocean to hide, achieve surprise, and attain an operational advantage. While this problem is more complicated than it was during the Cold War, it is still possible to achieve surprise and keep the adversary guessing. Modern technology extends scouting range, allowing detection at exponentially further ranges. However, the flip side is that target identification at extended range can be complicated in busy air and sea lanes, impacting the decision cycle of commanders, both friend and foe.

Strategically, the Navy took advantage of a regular series of complex global fleet exercises which allowed it to test new technology, operating concepts, and doctrine. These exercises simulated wartime conditions and exploited actual Soviet responses to

validate its operational concepts. These exercises yielded the blueprint the Navy would follow, in concert with the other services and its allies, in a confrontation with the Soviets. These exercises also served the dual strategic purpose of demonstrating U.S. resolve and naval capability, pressuring the Soviets with the reality that they would not be able to successfully confront the U.S. Navy and contributing to the peaceful end of the Cold War.

The final chapter will continue with the analysis, examining the U.S. Navy in the ear of the Global War on Terror from 2001 through 2017. In contrast with WWII and the Cold War, as discussed above, the next chapter will show how the Navy operated in an era without any significant opposition at sea and how it shifted focus to support the land wars of the early 21st century. This will explain how the Navy got to where it is today and, together with the previous two case studies, will provide a basis for drawing conclusions and making recommendations for the Navy as it once again faces great power competition.

Is the U.S. Navy Ready for Great Power Competition? “...From the Sea” and a Return to the Sea

The challenge is much more complex than simply reducing our present naval forces. We must structure a fundamentally different naval force to respond to strategic demands, and that new force must be sufficiently flexible and powerful to satisfy enduring national security requirements...

*-Department of the Navy, 1992
...From the Sea: A New Direction for
the Naval Service²²⁴*

The final case study covers the period from 2001 through 2017, an era bookended by the 9/11 attacks and the formal recognition by the U.S. of the return of great power competition as set forth in the 2017 National Security Strategy. The story begins, however, with the end of the Cold War when the U.S. once again faced no real competitor at sea. This led to strategic mission shift and a change of identity and purpose for the Navy. Samuel Huntington’s Transoceanic Navy phase had returned to the eager embrace of the Navy and national security policy circles. The Navy transformed from a service whose *raison d’être* was to fight and win at sea to one focused on projecting power ashore in support of joint U.S. military and national security objectives.

The Global War on Terror

With the September 11, 2001 attacks, the Navy swung into high gear, providing support to ground operations abroad. In the meantime, the fleet aged and dwindled in

²²⁴ Department of the Navy. *...From the Sea: Preparing the Naval Service for the 21st Century*. Department of Defense: Washington, D.C. Sept. 1992. <https://www.navy.mil/navydata/policy/fromsea/fromsea.txt>.

size. Other missions still needed to be filled and a smaller fleet found itself pulled in many directions. Simultaneously, other powerful nations were building or rebuilding their naval forces, targeting U.S. naval dominance.

By the end of this period, the Navy found itself unprepared for a renewal of great power conflict. This study will examine how the Navy's shift in focus at the end of the Cold War and the effect of the post-9/11 era explain how we arrived where we are today. This case will also provide contrast to the two previous eras of great power competition reviewed in the preceding chapter. The chapter will then conclude with overall analysis of all three case studies as well as recommendations to return the Navy to readiness for the great power challenges it faces today.

The Threat

At the time of the 9/11 attacks, no naval power anywhere in the world could challenge the U.S. Navy. While smaller regional navies such as those of Iran, China, Russia, North Korea, and others may have attempted to confront the U.S. on a limited regional basis, the U.S. Navy dominated the seas and could easily bring the force to bear to dispatch any potential threat. The U.S. Navy also continued to wield the tremendous technological advantage that it had enjoyed since the end of the Gulf War. Others, including China, Russia, and Iran, were not content with this status quo or their subordinate position. The Navy, however, kept focused on its most immediate threats, including terrorism, piracy, criminal activity, and natural or man-made disasters while other nations quietly began to build up their own naval capability.

Much as Soviet embarrassment during the Cuban Missile Crisis prompted construction of a Soviet blue water navy, the 1996 Taiwan Strait Crisis was such a

catalyst for the People's Republic.²²⁵ China, as a continental power, had heretofore possessed a small coastal defense naval force. Understanding that its territorial ambitions, foremost the reunification with Taiwan, would require a navy capable of standing up to the U.S., China commenced a long-term naval buildup and technological development program. The People's Liberation Army Navy (PLAN) pursued advanced technology designed to target the U.S. Navy and reduce, if not overcome, the U.S. Navy's technological advantage. This included buying and building aircraft carriers, a robust fleet of submarines, increasing numbers of advanced surface combatants, an amphibious capability, and advanced missile technology including hypersonic missiles and extremely long-range "carrier killer" ballistic missiles.²²⁶

The PRC had been in direct competition with the U.S. for some time in the diplomatic, intelligence, military, and economic spheres despite American efforts at cooperation and conciliation. China sought to overcome its perceived past humiliation at the hands of the West, usurp the American-led world order, and replace it with one in which it was the dominant power. Towards that end, the PRC took deliberate steps politically, militarily, economically, and technologically, seizing the initiative and placing it in direct competition with the U.S.²²⁷ Most significantly from a maritime standpoint, China sought dominion over its near-seas within and including the "first island chain", particularly in the South China Sea within a large area denoted by the

²²⁵ During the crisis, President Bill Clinton dispatched two U.S. Carrier Strike Groups to the Taiwan Strait as a show of U.S. resolve and to thwart any attempts by the PRC at reclaiming Taiwan. Toshi Yoshihara and James R. Holmes. *Red Star Over the Pacific: China's Rise and the Challenge to U.S. Maritime Strategy* (2nd Ed.). Annapolis: Naval Institute Press. 2018; 95, 109, 272.

²²⁶ Dave Majumdar. "Death Match: Navy Aircraft Carriers vs. China's Carrier-Killer Missiles (Who Wins?)" *The National Interest*. Dec. 13, 2018. <https://nationalinterest.org/blog/buzz/death-match-navy-aircraft-carriers-vs-chinas-carrier-killer-missiles-who-wins-38607>.

²²⁷ Jonathan D. T. Ward. *China's Vision of Victory*. U.S.A.: Atlas. 2019; 4-9.

“nine-dashed line”.²²⁸ Control over this area would allow the PRC freedom of maneuver for the military reunification of Taiwan if necessary and the exercise of sole control over the South and East China Seas, areas the Chinese consider integral to their own territory. Control of the first island chain would allow China to keep the U.S. out of the region so that it may exercise its own economic, military, and political domination within.²²⁹

The PRC made extensive use of “gray zone” operations and “salami slicing” tactics in addition to its overt military and naval expansion. These tactics included the use of fishing, research, and commercial vessels, the Chinese coast guard, and its maritime militia to challenge the maritime activities of regional competitors and create and militarize small islands throughout the South China Sea.²³⁰ It also included the use of economic incentives through the Belt and Road Initiative and similar efforts to establish Chinese seaports, logistical hubs, and other dual use assets capable of supporting Chinese military activity.²³¹ The PRC deployed an extensive anti-access/area denial (A2AD) capability throughout this region including sensors, anti-ship and anti-air missiles, and other weapons which were designed to prevent the U.S. Navy from operating within this A2AD umbrella without risking heavy casualties, including the potential loss of aircraft carriers or other capital ships.²³² These tactics posed a serious

²²⁸ The first island chain presents a natural maritime barrier to Chinese expansion and includes the Japanese home islands, Ryuku Islands, Taiwan, and the Philippines. The “nine-dashed line” was drawn on a map presented by China to the United Nations in 2009 marking a large area of the South China Sea over which China claimed sovereignty. The area enclosed by the nine-dashed line includes some of the world’s busiest sea lanes, as well as contested islands such as the Spratlys, Paracels, and Scarborough Shoal, large portions of the EEZ of other countries including the Philippines, Malaysia, Taiwan, and Vietnam. Yoshihara and Holmes. *Red Star*. 75, 170, 201.

²²⁹ Ibid. 94-99.

²³⁰ Jeremy A. Oliver. *China’s Maritime Militias: A Gray Zone Force*. Progressive Management Publications: Middletown, DE. 2019.

²³¹ Andrew S. Erickson and Ryan D. Martinson, eds. *China’s Maritime Gray Zone Operations*. Annapolis: Naval Institute Press. 2019.

²³² Yoshihara and Holmes. *Red Star*. 150-152, 180-185.

challenge to the ability of the U.S. and its allies to impose their will on China and contain its ambitions without escalating conflict.²³³

China was not the only great power challenge to the U.S. which developed during this period. Although the Russian fleet was largely composed of aging Soviet ships and was no longer as formidable as its Soviet forerunner under Admiral Gorshkov, Vladimir Putin put Russia on a program of military and naval modernization. The Russian fleet could not project power abroad like the U.S. Navy but it began to put to sea a growing fleet of ultra-quiet, advanced submarines which could threaten the SLOC of the U.S. and its NATO allies.²³⁴ Further, the Russian navy possessed advanced missile technology and a growing fleet of surface combatants which could challenge U.S. and NATO fleets in a regional conflict or deny them access to crucial waterways and chokepoints. Like China, Russia was also developing hypersonic missiles which would present a threat for which the U.S. Navy had no counter.²³⁵ By establishing A2AD zones in strategic locations close to Russia as well as American allies, Russia could potentially complicate or frustrate entirely U.S. or NATO naval freedom of maneuver while attempting to counter Russian aggression or protect vulnerable allies. With NATO's diminished naval capacity, the U.S. during this era lacked the force multiplier which played a critical role in the Maritime Strategy of the 1980s.²³⁶

²³³ Charles Edel. "Hiding in Plain Sight: Chinese Expansion in Southeast Asia." *War on the Rocks*. May 9, 2019. <https://warontherocks.com/2019/05/hiding-in-plain-sight-chinese-expansion-in-southeast-asia/>. and Lindsey Ford. "The 'Lippman Gap' in Asia: Four Challenges to a Credible U.S. Strategy." *War on the Rocks*. Dec. 3, 2018. <https://warontherocks.com/2018/12/the-lippmann-gap-in-asia-four-challenges-to-a-credible-u-s-strategy/>.

²³⁴ Tom Spahn. "The Russian Submarine Fleet Reborn." *U.S. Naval Institute Proceedings*. 2013; 139(6).

²³⁵ Kevin Eyer. "Charting the Course: Face the Hypersonic Truth." *U.S. Naval Institute Proceedings*. 2018; 144(9). and Mark B. Schneider. "The renewed Backfire Bomber Threat to the U.S. Navy." *U.S. Naval Institute Proceedings*. 2019; 145(1).

²³⁶ Thomas-Durell Young. "NATO's Selective Seablindness: Assessing the Alliance's New Navies." *Naval War College Review*. Summer 2019; 72(3): 13-39.

Finally, Iran rounded out the naval threat faced by the U.S. during this period. As a regional naval power in a geostrategically important location, Iran was a formidable adversary for the U.S. Navy with advanced missiles and a large fleet of small missile craft. While Iran would be no match for the U.S. in an all-out war, its naval forces were quite capable and would be a dangerous opponent, especially given the other strategic challenges the Navy faced around the globe.²³⁷ In fact, Iran humiliated the U.S. Navy in 2016 when it captured a wayward U.S. patrol boat which had wandered into Iranian waters.²³⁸ The Iranians, who had been engaging in acts of war against the U.S. throughout the Iraq War and beyond, were clearly not afraid to confront U.S. forces, including the Navy, despite being a weaker opponent. The maritime threat posed by Iran will likely not recede anytime soon, despite American desire to refocus strategy and efforts on larger-scale threats.

During most of the period, perhaps the greatest danger faced by the Navy came not from enemy fleets but the asymmetric threat. In October 2000, the destroyer *USS Cole* was refueling in Aden harbor when suicide bombers aboard a small skiff detonated a bomb next to the thin-skinned vessel, nearly sinking it and killing 17 sailors.²³⁹ By the end of the period, the Navy saw itself as increasingly vulnerable to low-cost asymmetric

²³⁷ James R. Holmes. "Convoy Time: Is the U.S. Navy Even Ready for a War with Iran." *The National Interest*. June 21, 2019. <https://nationalinterest.org/blog/buzz/convoy-time-us-navy-even-ready-war-iran-63677>. and James R. Holmes. "The U.S.-Iran Naval War of 2019: What It Could Look Like." *The National Interest*. May 11, 2019. <https://nationalinterest.org/blog/buzz/us-iran-naval-war-2019-what-it-could-look-57012>.

²³⁸ Megan Rose, Robert Faturechi, and T. Christian Miller. "Trump Keeps Talking About the Last Military Standoff with Iran – Here's What Really Happened." *ProPublica*. June 24, 2019. <https://www.propublica.org/article/trump-keeps-talking-about-last-military-standoff-iran-what-really-happened-farsi-island-navy>. A review of this incident found that it was a result of poor planning, poor training, and poor leadership. Mahan has emphasized the importance of leadership especially, as well as training in naval operation. Certainly, Iran appears to question the U.S. political will behind its naval might, leading to the perception of the U.S. as a paper tiger. Needless to say, other potential adversaries observe such incidents as well.

²³⁹ Thomas J. Cutler. *A Sailor's History of the U.S. Navy*. Naval Institute Press: Annapolis. 2005; 119-129.

threats when operating in littoral areas close to shore. Proliferating, low-cost, and portable threats such as drones, anti-ship missiles, small attack craft, and homemade explosives fielded by non-state actors or intermediaries had the potential to sink or heavily damage billion-dollar warships.²⁴⁰ Given that the Navy's focus was on operations ashore, it is no surprise that this composed one of its greatest threats.

The Fleet

At the time of the September 11, 2001 attacks, the fleet had already substantially declined from its late 80's peak of nearly 600 total ships: almost 220 surface warships (including 4 battleships), approximately 100 attack submarines, and 14 aircraft carriers. As of September 2001, the fleet numbered 316 total ships: 127 surface warships (and no battleships), 55 submarines, and 12 carriers. By the end of 2016, the fleet numbered only 275 ships, including 93 surface warships, 56 submarines, and 10 carriers.²⁴¹ This marked a precipitous decline, despite the fact that the Navy maintained a very high operational tempo throughout the period as it supported the GWOT in addition to conducting its various other missions around the globe.

The successful conduct of naval operations requires both quality and quantity. This fact is as true during peace as in war. The U.S. Navy is continually forward deployed throughout the world, providing deterrence and presence, supporting military operations ashore, protecting sea lanes, maritime commerce, and the freedom of navigation, providing humanitarian assistance, training and working with allied navies, and conducting other missions as directed by the National Command Authority including

²⁴⁰ Luke Tarbi and David L. Knoll. "Could Asymmetric Warfare 'Sink' the U.S. Navy?" *National Interest*. May 27, 2014. <https://nationalinterest.org/blog/the-buzz/could-asymmetric-warfare-sink-the-us-navy-10540>.

²⁴¹ "U.S. Ship Force Levels."

ballistic missile defense and strategic nuclear deterrence. Despite the capability of individual ships, a decrease in the overall number of ships increases the difficulty of performing these continuous and simultaneous responsibilities while also ensuring that training, maintenance, and surge capacity are not diminished.

While the number of hulls declined, each ship in the fleet became more complex and more expensive. With no peer naval force to combat at sea, the Navy began to divest itself of single-mission specialty ships and capabilities, such as ASW frigates and mine sweepers. Instead, it concentrated on complex, highly capable ships focused on what the Navy saw as its primary mission, power projection ashore. These multi-function ships also nominally maintained the ancillary capabilities formerly handled by specialty vessels; however, this came with a cost. The average cost of a new ship in the fleet in 2019 dollars rose from approximately \$1 billion in the 1980s to \$2 billion today.²⁴² As the ships became more capable and complex, thus more expensive, that capability was spread across fewer hulls, increasing risk and limiting ability to disperse presence and capability across the Navy's many operating areas. The vastness of the ocean, along with the limited speed of naval vessels, resulted in delayed response times due to significant transit time when moving naval forces from one location to another.²⁴³ Additionally, a ship can typically operate in only one role at a time and can only be at one place at a time, minimizing the value of having just a few expensive multi-role ships. Having too few ships inadequately tailored to the appropriate mission set has led to high-end, large

²⁴² Megan Eckstein. "Modly: Navy Current Warship Mix is Not Optimal for Future Fight." *U.S. Naval Institute News*. Oct. 28, 2019. <https://news.usni.org/2019/10/28/modly-navy-current-warship-mix-is-not-optimal-for-future-fight>.

²⁴³ For example, from Norfolk it takes approximately 8 days for a warship to steam to the GIUK Gap, or 20 days to the Strait of Hormuz. In the Pacific, from San Diego, it takes 6 days to steam to Hawaii, 12 days to Japan, 15 days to Guam, 20 days to the South China Sea, and 27 days to the Strait of Hormuz. From Heritage. *Assessment*.

surface combatants such as destroyers and cruisers conducting missions like counterpiracy and maritime interdiction operations, which are better suited to smaller, less expensive ships.²⁴⁴

The surface fleet was made up primarily of upgraded legacy platforms first fielded in the 1980's. While very capable, these ships were growing old. Design and construction of new ships was guided significantly by the Navy's view that its future lie primarily in force projection ashore rather than combat against enemy ships on the high seas. New projects included the Littoral Combat Ship, *Zumwalt* class DDG-1000, and *Ford* class super carrier. These platforms were all designed and intended to be fielded with a host of revolutionary new technologies. Unfortunately, they were all characterized by protracted development and roll-out times, massive cost overruns, and the failure of their most central new technologies to perform as advertised.²⁴⁵ As a result, by the end of the period, none of these platforms were serviceable to any significant degree and they consumed valuable funding lines which could not be used to construct less revolutionary and more evolutionary ships at reasonable cost. This was not just a problem with ship construction. The development of the F-35 Joint Strike Fighter, decades in the making,

²⁴⁴ Sebastien Roblin. "Here is Why the U.S. Navy's Littoral Combat Ships Punch Below Their Weight." *National Interest*. Nov. 5, 2017. <https://nationalinterest.org/blog/the-buzz/here-why-the-us-navys-littoral-combat-ships-punch-below-23042>.

²⁴⁵ For instance, the LCS was designed to operate using mission modules including ASW, mine-counter measures, and surface warfare, despite being poorly suited to conduct the first two missions. There have also been issues with module rollouts, leaving these expensive ships without a mission for an extended amount of time. The *Zumwalt* was designed around an advanced gun system for which the Navy cancelled development of the expensive ammunition the gun would have fired. The *Ford* has been plagued with issues relating to its electrical system, elevators, electromagnetic catapults, and arresting gear. John M. Donnelly. "Navy Routinely Buys Defective Ships." *Roll Call*. Mar. 20, 2019. <https://www.rollcall.com/news/navy-routinely-buys-defective-ships>.

was significantly over budget and still not deployed in combat units by the end of the period.²⁴⁶

The carrier battle group (CVBG) and battleship-centric surface action groups (SAGs) were the formations around which the Navy conducted operations during the end of the Cold War. During the early 21st Century, operations instead centered around the Carrier Strike Group (CSG). The CSG differed from the CVBG in that the main mission of the CSG was to project power ashore by prosecuting strike missions against land targets. The mission of the CVBG was more Mahanian in nature, in that it was designed for sea control operations and to destroy enemy battle fleets in addition to launching air strikes against targets ashore. Or, as Corbett might observe, the CVBG was designed to gain command of the sea while the CSG was focused more on exercising that command in support of joint operations. The CSG was designed to operate primarily in uncontested environments of limited threat. Defensive protection of the CSG by its surface escorts and air wing was not as robust as that of its predecessor.

The air wing, which gave the CSG its offensive punch, was significantly smaller than its Cold War predecessors and was composed of multi-mission aircraft which were not optimized for fleet defense, air to air combat, or other missions. Air wings of the CVBG were up to a third larger and had longer range fighters and strike aircraft as well as specialty aircraft optimized for their specific missions. By the end of the period, the F/A-18 *Hornet* and *Super Hornet* were used for most all roles including air to air, ground strike, electronic warfare, and air to air refueling. The F/A-18 lacks the range and specific capability of many of its predecessors. The H-60 helicopter became the lone

²⁴⁶ Cropsey. *Seablindness*. 13-18.

rotary wing platform used for ASW, search and rescue, sea combat, transport, and utility roles, replacing several different helicopters used for specific roles in the past. The result is that while the CSG is an extremely potent weapon, it is becoming increasingly vulnerable and likely to be less effective in confronting peer and near-peer naval forces at sea.²⁴⁷

In addition to the CSG, the other part of the Navy's kinetic strike capability was the guided missile. First fielded in the 1980's, Navy surface ships utilized the Vertical Launch System (VLS) in which a variety of missile types can be launched from VLS cells on ships. These missiles included anti-air, ASW, anti-ship, anti-ballistic missile, and land attack missiles. Navy surface ships derived most of their offensive punch from these VLS housed missiles, with between 80-122 cells on Navy destroyers and cruisers. The VLS system provided the Navy flexibility due to the ability to load different types of missiles into the system depending on the ship's mission profile. During the period, these systems were well suited to the Navy's power projection ashore mission. The downside was that VLS could only be reloaded in a friendly port. The missiles could not be replenished at sea. While this was not overly limiting when the Navy operated in uncontested waters and typical strike missions involved limited quantities of missiles, in a war at sea this could be problematic. Combat against multiple enemy naval threats would quickly deplete missile payloads. With no ability to replenish underway, ships would quickly be out of the fight having to withdraw and rearm. This could be especially

²⁴⁷ James Holmes. "Why It's Time for the Carrier Battle Group." *National Interest*. July 4, 2017. <https://nationalinterest.org/blog/the-buzz/why-its-time-the-carrier-battle-group-21404>.

troublesome in the Pacific given the vulnerability of U.S. forward bases and long transit times to more secure rear areas where reloading would have to be conducted.²⁴⁸

As Huntington noted, the Transoceanic Phase of naval policy was focused largely on naval combat in the littoral areas and projecting power ashore in support of joint military operations. This was as true in the early 21st Century as it was in the 1950s. Huntington argued that the Navy required an organizational structure in support of the strategic concept which drove its operations in any given phase of national policy.²⁴⁹ It is not therefore inappropriate that the Navy so constituted its forces at this time. Unfortunately, by putting all of its eggs in this basket, it emerged from this phase ill-prepared for the next.

The decreasing number of available ships throughout the period continued to be tasked with conducting the same number of missions. This required ships to spend more time at sea leaving less time for training, refitting, and maintenance. Typically, to provide for those sustainability tasks, it takes four ships in the fleet to keep one at sea.²⁵⁰ Budget woes, including the Budget Control Act of 2011,²⁵¹ led to cost-cutting and efficiency measures which degraded readiness by reducing or postponing maintenance, sailing with skeleton crews, and putting to sea ships with unresolved maintenance issues.²⁵² Evidence of the lack of maintenance was visible in the deteriorating and rusty

²⁴⁸ Hunter Stires. "Exclusive: CNO Announces the Return of Vertical Launch System At-Sea Reloading." *National Interest*. July 5, 2017. <https://nationalinterest.org/feature/exclusive-cno-announces-the-return-vertical-launch-system-21425?page=0%2C1>.

²⁴⁹ Huntington. "*Naval Policy and the Transoceanic Navy*."

²⁵⁰ Heritage. *Assessment*.

²⁵¹ P.L. 112-25.

²⁵² Sydney J. Freedberg Jr. "Manpower, Parts Shortages Would Hinder Navy In Wartime." *Breaking Defense*. Feb. 14, 2018. <https://breakingdefense.com/2018/02/manpower-parts-shortages-would-hinder-navy-in-wartime/>. and John H. Pendleton. "Navy Readiness: Actions Needed to Address Persistent Maintenance, Training, and Other Challenges Affecting the Fleet." *GAO Reports*. Sept. 19, 2017; 1-27.

appearance of U.S. Navy ships.²⁵³ These issues negatively impacted fleet readiness. This lack of readiness culminated in the summer of 2017 when the Navy suffered two fatal collisions at sea. Poor training, poor seamanship and lack of maintenance contributed to these two tragedies. Complaints had been lodged up the chain of command for years regarding the negative effect of the accumulation of readiness issues amidst an unrelenting operational tempo. Navy leadership however, reportedly turned a blind eye. The result was the death of 17 sailors after two of the most advanced warships in the world collided with large civilian cargo ships at sea.²⁵⁴

This leads to the final issue, the naval industrial base, including ship construction, repair, and maintenance facilities. During the post-Cold War period, the Base Realignment and Closure (BRAC) process, as the name suggests, resulted in the realignment, consolidation, and closure of numerous naval facilities. The BRAC commission sought to reduce “excess shipyard capacity” among other things.²⁵⁵ BRAC also resulted in the Navy divesting itself of waterfront naval facilities consisting of valuable real estate. While this may not have posed a major concern during the period in which the U.S. faced no peer competitor, the commission appeared not to consider that it would be difficult, if not impossible to obtain suitable basing facilities in densely

²⁵³ James Holmes. “Does the U.S. Navy Have a Rust Problem?” *National Interest*. Sept. 27, 2019.

<https://nationalinterest.org/blog/buzz/does-us-navy-have-rust-problem-84256>. and CDRSalamander. “A Polite Rozhestvenski Whisper to the Trump Transition Team.” *U.S. Naval Institute Blog*. Jan. 11, 2017. <https://blog.usni.org/posts/2017/01/11/a-polite-rozhestvenski-whisper-to-the-trump-transition-team>.

²⁵⁴ T. Christian Miller, Megan Rose and Robert Faturechi. “Fight the Ship: Death and Valor on a Warship Doomed by Its Own Navy.” *ProPublica*. Feb. 6, 2019. <https://features.propublica.org/navy-accidents/uss-fitzgerald-destroyer-crash-crystal/>. and Robert Faturechi, Megan Rose, and T. Christian Miller. “Years of Warnings, Then Death and Disaster: How the Navy Failed Its Sailors.” *ProPublica*. Feb. 7, 2019. <https://features.propublica.org/navy-accidents/us-navy-crashes-japan-cause-mccain/>.

and Kevin Eyer. “Collision Reports Reveal Bigger Issue.” *U.S. Naval Institute Proceedings*. 2017. 143(11). and Kevin Eyer. “Collisions: Part I—What Are the Root Causes?” *U.S. Naval Institute Proceedings*. 2017. 143(8). and Kevin Eyer. “Collisions: Part III—Maintenance.” *U.S. Naval Institute Proceedings*. 2017. 143(8).

²⁵⁵ John X. Carrier. “What Hath BRAC Wrought?” *U.S. Naval Institute Proceedings*. 2005. 131(11).

developed and populated waterfront areas should they be required in the future. By the end of the period, the U.S. Navy had only four public shipyards; Norfolk Naval Shipyard, Portsmouth Naval Shipyard, Puget Sound Naval Shipyard and Intermediate Maintenance Facility, and Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility. According to the Naval Sea Systems Command (NAVSEA), these facilities consist primarily of infrastructure from the 19th and early 20th centuries and are based on industrial models from that period. The material condition of these shipyards was rated by NAVSEA as poor to failing.²⁵⁶ The lack of shipyards and maintenance facilities contributed to the fleet-wide maintenance deficiencies that led up to the 2017 fatal collisions.²⁵⁷ By the end of the period, the fleet was thus being run ragged by nearly two decades of a relentless operational tempo falling on an ever smaller fleet with insufficient maintenance.

Lack of shore-based shipyards and infrastructure went hand-in-hand with the Navy's antiquated acquisition process and diminished industrial base. The U.S. no longer retained the capability to produce at scale many components critical to naval ships, platforms, aircraft, and weapons systems. This limited the ability of the U.S. to rapidly mobilize and expand the materiel side of the force or repair and replace damaged or lost ships and other vital equipment.²⁵⁸ These problems were compounded by the dysfunctional Congressional budgeting process, which results in annual budgeting through Continuing Resolution. This short-term, last-minute, and unreliable method of

²⁵⁶ Naval Sea Systems Command. "Executive Summary to Naval Shipyard Recapitalization and Optimization Plan." *U.S. Naval Institute News*. Sept. 12, 2018. <https://news.usni.org/2018/09/12/executive-summary-to-naval-shipyard-recapitalization-and-optimization-plan>.

²⁵⁷ Eyer. "Collisions – Part III."

²⁵⁸ As of 2019, the U.S. has only one large-barrel gun manufacturer, one propeller shaft manufacturer, and a limited number of producers of other key components. Modly. "Are We Building the Naval Power the Nation Needs?"

budgeting prevents the Navy from allocating funds in advance for long-term projects. The lack of budgetary certainty creates instability in the industries which rely on naval contracts and impedes their ability to invest in costly infrastructure, retain highly-skilled personnel, and maintain viable business models.²⁵⁹ The Navy will be unable to ensure timely, efficient, and effective maintenance of the fleet unless Congress addresses its budgeting process.

The Strategy

At the time of the 9/11 attacks, the Navy was operating from its 1992 strategy entitled *...From the Sea*, which envisioned a world where “the prospect of global war had receded,” and the Navy would have the “ability to command the seas in areas where we anticipate future operations.” To reflect this vision, the Navy would “resize our naval forces” and could “afford to de-emphasize efforts in some naval warfare areas.” In lieu of sea combat, the strategy emphasized the following areas: naval expeditionary forces, joint operations, forward operations from the sea, power projection, strategic deterrence, and force sustainment and logistics.²⁶⁰ The heart of the strategy was therefore, as the title implied, how the Navy could support land based operations from the sea. The Navy used this strategy to inform its acquisition, fleet composition, and operational decisions throughout the post-Cold War period into the GWOT.

This strategy effectively set the tone for naval operations and accurately predicted the operating environment at the beginning of the 21st Century. Naval forces provided the flexibility to quickly respond to the initial attacks with carrier air power delivering the

²⁵⁹ Tim Kaine. “Are We Building the Naval Power the Nation Needs?” Address. Defense Forum 2019 from U.S. Naval Institute. Washington, D.C. Dec. 5, 2019.

²⁶⁰ Department of the Navy. *...From the Sea*.

first strikes.²⁶¹ Not only did the aircraft carrier possess massive striking power, it offered unmatched operational flexibility as a mobile platform operating in international waters, requiring no basing rights or stationing of U.S. personnel on foreign soil. This flexibility remained critical throughout the GWOT as the U.S. conducted offensive operations in various regions and countries around the globe, although most operations centered around the Central Command area of responsibility.

While the strategy was correct in the short term about the nature of the global maritime operating environment, the status quo would not endure. As the U.S. remained focused on combating terrorism overseas and the related wars in Iraq and Afghanistan, China and Russia both began to act more aggressively and build or reconstitute their naval forces. This did not go completely unrecognized by the U.S., despite the Navy's continued adherence to its ...*From the Sea* playbook. In the fall of 2011, President Barack Obama's administration announced its "pivot to the Pacific." Among other things, this was to involve a rebalancing of military priorities, a greater focus on Asia and containment of a rising China.²⁶² In practice, however, the administration found it difficult to completely untangle from the Middle East and Afghanistan, requiring continued devotion of attention and military resources there. China, perceiving a U.S. effort to contain it, became more aggressive in its military modernization and territorial ambitions, building and militarizing small islands in contested waters of the South China Sea and seeking to exert its influence with both a carrot and stick approach in its near

²⁶¹ The *USS Enterprise* was heading home following a six-month deployment at the time of the attacks. Without waiting for orders, the captain quickly turned the ship around and headed towards Afghanistan. *Enterprise* launched the first U.S. strikes against the Taliban in the GWOT on October 7, 2001. From Cutler. *A Sailor's History*. 71-75.

²⁶² Congressional Research Service. *Pivot to the Pacific? The Obama Administration's "Rebalancing" Toward Asia*. by Mark E. Manyin, Stephen Daggett, Ben Dolven, Susan V. Lawrence, Michael F. Martin, Ronald O'Rourke, and Bruce Vaughn. R42448. (March 28, 2012).

abroad. Meanwhile, Russia took advantage of the redirection of American focus from Europe to Asia as well as its ongoing preoccupation with Afghanistan and the Middle East to become more assertive through increased meddling and initiating territorial incursions in eastern Europe²⁶³ The Navy had deactivated its Atlantic Fleet in 2006, no longer seeing a significant threat in that area. Limited naval resources were therefore available or allotted to operating in the Atlantic and its connected strategic waterways to support European security or deter Russia from violating the territorial integrity of its neighbors.²⁶⁴

As the Navy recognized the emergence of technologically advanced adversaries, it rolled out a new operational concept. “Air-Sea Battle” was designed as a concept to provide guidance to help the Navy confront adversary advanced A2AD systems through “networked, integrated, attack-in-depth to disrupt, destroy, and defeat” such threats. Air-Sea Battle required closely coordinated, networked operations between air and naval forces to disrupt adversary intelligence collection and command and control, destroy or neutralize A2AD weapons systems, and defend against such weapons if employed against U.S. forces. Significantly, Air-Sea Battle was “not a concept aimed at any particular potential adversary, nor a campaign plan designed to accomplish a specific national objective.”²⁶⁵ By not naming a specific adversary or adversaries, the strategy did not focus the Navy’s efforts on confronting and defeating its most likely opponents, Russia and/or China. Failure to name the threat made the strategy generic and less effective as it

²⁶³ John Ford. “The Pivot to Asia Was Obama’s Biggest Mistake.” *The Diplomat*. Jan. 21, 2017. <https://thediplomat.com/2017/01/the-pivot-to-asia-was-obamas-biggest-mistake/>.

²⁶⁴ Sam Tangredi. “Decommission Fleet Forces Command: It Is Time to Return Navy Readiness to the Chief of Operations and Fleet Operations to an Atlantic Fleet.” *U.S. Naval Institute Proceedings*. 2019. 145(12).

²⁶⁵ “The Air-Sea Battle Concept Summary.” *U.S. Navy*. Story number NNS111109-17. Nov. 9, 2011. https://www.navy.mil/submit/display.asp?story_id=63730.

did not allow for operational planning against a specific enemy, accounting for specific geography, enemy strategic objectives, doctrine, and operating concepts, or specific enemy weapons. The strategy was therefore insufficiently focused to achieve its desired objectives.

While the Navy did not have to directly confront adversary A2AD systems while conducting its operations, it regularly confronted excessive Chinese maritime claims in order to maintain freedom of the seas. The Navy periodically conducted freedom of navigation operations (FONOPS) within 12 nautical miles of reclaimed maritime features and artificial islands claimed by China, such as the Spratly Islands in the South China Sea. The object of these operations was to demonstrate that the PRC had no legitimate territorial claim to those waters and that they remained open to international navigation. While FONOPS served an important purpose as a point of law, preventing China's claims to be accepted as a part of customary maritime law, their practical success has been debatable. U.S. FONOPS sometimes sent a mixed message, when the Navy did not assert specific maritime rights in conjunction with the operations. When American warships transited claimed waters under "innocent passage" but did not conduct any military operations, they failed to fully refute Chinese claims to those waters. The PRC also viewed any FONOPs as provocative and as trespassing in Chinese territorial waters, despite American assertions. These operations also often failed to impress allies and other regional powers who were regularly harassed by Chinese military and non-military vessels in those same contested waters. The brief and transient appearance of a U.S. warship showing the flag often failed to achieve the desired effect. American ships were shadowed by PLAN warships as they passed through the contested waters. The Navy's

fleeting presence was then seized upon by Chinese propagandists who claimed the PLAN chased the U.S. Navy away. As a result, the fleeting U.S. presence did little to alter the perceived balance of power in the region or provide direct support to fisherman and commercial vessels of the Philippines, Vietnam, or other countries under constant pressure by China.²⁶⁶

As the GWOT wore on and the Navy began to feel the strain of its high operational tempo and reduced fleet, it sought to introduce predictability and stability to operations, training, and maintenance through the Optimized Fleet Response Plan (OFRP). The plan sought to realign fleet “maintenance, training, and deployment cycles to fit in a standard 36-month rotation.”²⁶⁷ The OFRP was designed for an era when the U.S. had uncontested naval supremacy and could more easily operate on its own timeline. By the time of its introduction, however, that era was drawing to a close as China began its ascent and Russia its resurgence. The OFRP prioritized efficiency over readiness, often causing maintenance to be deferred or short-changed to meet OFRP scheduling requirements. The predictable schedule sacrificed operational flexibility and effectiveness and was unsuited for the emerging era of great power competition which was to follow, making the Navy’s operations more predictable to its adversaries.²⁶⁸

In summary, from 2001 through 2017, the Navy supplied critical support to the GWOT and the wars in Iraq and Afghanistan. This support consisted primarily of

²⁶⁶ Mark J. Valencia. “U.S. FONOPS in the South China Sea: Intent, Effectiveness, and Necessity.” *The Diplomat*. July 11, 2017. <https://thediplomat.com/2017/07/us-fonops-in-the-south-china-sea-intent-effectiveness-and-necessity/>.

²⁶⁷ U.S. Fleet Forces Command. “What is the Optimized Fleet Response Plan and What Will It Accomplish?” *Navy Live: The Official Blog of the U.S. Navy*. Jan. 15, 2014. <https://navylive.dodlive.mil/2014/01/15/what-is-the-optimized-fleet-response-plan-and-what-will-it-accomplish/>.

²⁶⁸ Bryan McGrath. “Making the Fleet Ready for a Peer Challenge.” Podcast audio. *Midrats*. CDR Salamander. Episode 516. Nov. 24, 2019.

providing kinetic strikes ashore through aircraft and ship launched missiles.

Additionally, the Navy assured the safe passage of supplies and war materiel by sea through its Military Sealift Command and by ensuring the security of its sea lines of communication (SLOC). Naval strategy did not adjust however, to account for the declining number of hulls in the water, resulting in an ever-increasing operational tempo that strained the fleet. Between supporting the GWOT and efforts related to the Pacific pivot, naval forces were everywhere employed as a critical piece to U.S. national security strategy. Naval strategy did not focus however, on any particular adversary, leaving it sub-optimally prepared for the direct threats it faced as China, Russia, and even Iran closed the technology gap and presented increasingly credible threats to U.S. maritime dominance.

Analysis

A study of the Navy in the first decade and a half of the twenty-first century provides several lessons to be learned. First, the number of ships available matters. Despite the increasing capability of each individual warship, each ship can be in only one place at a time. The increasing reliance on expensive, complex, multi-role ships meant that using a ship in one role would make it unavailable for use in the others. Likewise, losing to enemy action an expensive multi-role warship conducting one mission, (such as an Aegis cruiser conducting ASW or close-inshore naval gunfire support) means a loss of capability in all missions.²⁶⁹ This is not a sustainable model for great power competition.

²⁶⁹ Wayne P. Hughes, Jr. “Best of Wayne P. Hughes, Jr. Captain, USN (Ret.)” Podcast audio. *Midrats*. CDR Salamander. Episode 517. Dec. 5, 2019 (first aired as “Policy, Fleet Size, and the Navy.” Episode 150: Nov. 2012).

Additionally, sufficient numbers of ships are required to ensure there is adequate time for training and maintenance between deployments. Fielding a large number of ships is more difficult, however, as the cost per ship continues to rise. Not only does this make new construction more costly, but in the event of a major conflict where attrition, damage, and ships sunk by enemy action are inevitable, the replacement of losses becomes problematic. This problem is compounded by a lack of shipyards, dry docks, and repair facilities, as well as the age and poor condition of the few facilities in operation.

Finally, during this era, the strategy guided the Navy. The 1992 strategy ...*From the Sea* provided the direction for the Navy for the following 25 years. While it accurately predicted the near-term operating environment, it left the Navy poorly positioned to respond to the reemerging threat of peer competitors and great power competition. Strategic concepts which do not focus the Navy on addressing a specific adversary are not as effective in focusing naval training and preparation as those which name a specific potential enemy. The Navy must embrace the return of Huntington's Oceanic Phase of naval policy and change course to meet the challenges of defending American national security in contested seas.

Overall analysis of the three cases

Overall, this research determined that the Navy is not optimized for the renewed era of great power competition in which the U.S. finds itself. The Navy made a deliberate strategic departure from preparing to fight enemy fleets for command of the sea at the end of the Cold War. Focusing instead on power projection ashore against

asymmetric and low-technology threats for nearly two decades, the Navy awoke in 2017 to find that its dominance of the maritime domain could no longer be taken for granted. China and Russia had grown increasingly assertive and taken major technological leaps forward, allowing them to contest the U.S. Navy at sea, potentially denying it the freedom of maneuver and operation in disputed waters. Fundamentally, maritime strategy is about access and control.²⁷⁰ While its adversaries seek to deny it both, the Navy must focus the composition of its fleet and its strategy to allow it to obtain access and achieve control when and where U.S. national strategy demands.

The Navy must realign itself to the demands of great power competition. It must grow and diversify the fleet, while keeping costs in check. It must ensure the fleet is properly maintained so that it will be ready to fight peer competitors. The Navy must continue to invest in emerging technologies to maintain or regain its competitive advantage and must modernize construction, repair, and maintenance infrastructure ashore. The Navy must continue to ensure its sailors are the best trained and best led in the world. It must harden its forward bases, increase stockpiles of missiles and other munitions, and develop a forward reloading capability. The Navy must integrate its operations and strategy with its sister sea-services, the Marine Corps and Coast Guard. Finally, it must develop strategy and doctrine suited to its competitors in the age of modern technology. This includes learning to operate in a network denied environment. To accomplish these objectives will require leadership and strategic guidance as well as a significant investment by the American public to ensure the U.S. has the Navy it needs.

²⁷⁰ James R. Holmes. *A Brief Guide to Maritime Strategy*. Naval Institute Press: Annapolis. 2019; 94.

Examination of the two cases in the previous chapter, and the final case above reveals some differences as well as some common themes. The differences primarily relate to the difference in the global situation in the three periods, the differences in adversaries, and the differences in technology. This analysis cannot hope to touch on every lesson learned and largely leaves aside extended discussion of important factors such as the importance of allies, submarine warfare, and nuclear deterrence. This analysis does, however, hope to derive several useful lessons which can inform the question of naval preparedness for great power competition.

The Threat

The reviewed cases provided examples of three different geopolitical situations, the first two involving the Oceanic Phase of naval policy and the last the Transoceanic Phase. The first, WWII, involved global war on a massive scale against multiple adversaries in all domains. This was a multi-polar world where several great powers aligned into two affiliated sides, the Axis and the Allies. The second involved a bi-polar world and a cold war between two nuclear-armed superpowers and their aligned partners, NATO and the Warsaw Pact. While regional and proxy wars occurred, tensions between the two antagonists simmered below the open conflict level. The third case involved a unipolar world at the outset, with the U.S. as the world's lone superpower. The U.S. was engaged in asymmetric struggles against terrorists and other regional adversaries throughout the period, while other major powers opposed to the U.S. sought to claim their place as great powers by the end of the period.

Regardless of the geopolitical situation, the U.S. Navy was at the forefront of defending American national security, confronting American enemies, and exerting

American influence abroad. During WWII and the early 21st century, this was done largely through active combat operations. In the late Cold War, this occurred through peacetime exercises, global presence, and occasional combat action against regional actors. There is some overlap during the three periods, illustrating the flexibility the Navy needs to maintain as it is often at the forefront of U.S. foreign policy both in peace and in war.

The changing geopolitical situations were driven by the primary adversaries confronted by the U.S. during each period. The Navy's foes during WWII were Germany and Japan, which it simultaneously engaged in the Atlantic and Pacific. During the Cold War, the U.S.S.R., an ally during WWII, was the primary adversary. Soviet aligned and third world states periodically posed as regional adversaries during the period as well. The U.S. successfully isolated and pressured the Soviets by exploiting the wedge between them and China. The Navy then found itself confronting Iran during the Tanker War and soon followed by Iraq during the Gulf War. The early 21st century again found the Navy battling Iraq and Iran, primarily through power projection operations, as well as supporting land operations in the Global War on Terror. China and Russia developed and emerged as serious competitors by the end of this period.

Regardless of the adversary however, the geography remained the same, meaning that the same chokepoints and key maritime terrain would continue to be important, whether trans-Atlantic SLOC or Pacific archipelagos in WWII, the Cold War, and early 21st century, or the Mediterranean, Suez Canal, Strait of Hormuz, and Persian Gulf in the late Cold War and most recent two decades. Geographical continuity lends itself to strategic continuity, even as the adversaries may (or may not) change.

The Fleet

Technology

Technology has evolved since WWII, although many of the technological concepts in use today were fielded in a more rudimentary form during that war. Radar, still a new concept during WWII, and other sensors have developed significantly since then, pushing out detection ranges and capabilities. Communications have evolved beyond mere radio communication to advanced computer networks which tie in human and machine nodes to deliver unprecedented situational awareness and information throughout the battlespace and around the world. Weapon ranges have extended with jet aircraft and long-range air, land, ship, and sub-launched missiles. Despite these technological leaps forward, the element of surprise, human error, and the fog of war are as relevant today as ever. Engagements still happen at close range, deception still cloaks the presence, location, and intentions of hostile forces, and human grit and courage are still required to win the day. Naval forces still exist to contend with each other for command of the sea and naval combat remains intense, bloody, and chaotic. As Mahan has argued, good leadership and well-trained sailors are essential to victory and success in such an environment.

Size matters

Several commonalities have been observed in the case studies which relate to the Navy and its success or failure. The first consistent theme is that in naval operations, numbers matter. This is true in both war and peace. The oceans are a vast expanse. The geography of the Pacific in particular requires long transits and distant bases, with key

maritime terrain spread out over an enormous distance. Despite advances in all manner of technology over the past hundred years, naval forces and maritime logistics vessels are still limited to moving at fairly slow speed, resulting in long transit times. This can delay response to crises, complicate logistics and supply efforts, impact the convergence of distributed forces at a key time and place, limit the ability for ships to quickly repair, rearm, resupply, and get back into the fight, and limit the areas influenced by naval forces. Simply put, the more ships available, the larger the felt presence and the more easily gaps can be filled. Success during WWII relied on a fleet of unprecedented size. This allowed for continuous operations, a massive logistics effort, and the replenishment of forces lost to attrition through enemy action. Success in the Cold War also involved a larger fleet, which was able to put pressure on the Soviets almost continuously in regions around the globe. The effect of a diminished fleet can be seen in the early years of the 21st century, as readiness has suffered and the fleet has been insufficient to have a significant influence on events in the South China Sea and western Pacific.

One way the U.S. has typically tried to compensate for a lack of numbers is through forward deployment of naval forces. Prior to WWII, the U.S. Pacific Fleet was moved from its base in San Diego to Pearl Harbor. Some were concerned when the fleet was relocated that it would be vulnerable or that its forward basing in Hawaii would be seen as provocative by the Japanese. As history demonstrated, these fears were not unfounded. The U.S. fleet was fortunate it did not suffer more catastrophic damage to its repair yards, dry docks, and fuel depot during the Japanese surprise attack on December 7, 1941, primarily because the Japanese failed to follow up their initial attack and target this vital infrastructure. Similarly, the U.S. carriers were spared due to the fortuitous

coincidence of being at sea during the attacks. While the raid on Pearl Harbor was costly for the U.S., its escape without debilitating long term damage to fleet operations was due more to Japanese missteps than anything else.

Today, the U.S. has forward deployed naval forces in Yokohama, Japan and an important base in Guam. While these are important peacetime bases which contribute to U.S. forward presence and help mitigate the tyranny of distance, many recognize a similar dilemma as faced by the U.S. at Pearl Harbor in 1941. These bases are within striking range of Chinese air, naval, and missile forces. Most of these facilities are not hardened, as they have not faced the threat of serious attack in decades. U.S. carriers and other ships are never more vulnerable than when tied up pier-side at a forward base where they can be easily located, are without their airwing, and lack the ability to maneuver to evade incoming missile salvos. China likely sees these forces as provocative and placed to contain Chinese ambitions. Should China view war with the U.S. as inevitable or necessary for China to accomplish its strategic goals, it is probable such a war would begin with a surprise attack targeting these facilities and any ships in port, denying the U.S. the benefit of their use. Forward basing therefore is a double-edged sword and it is imperative that adequate defenses be maintained at such bases to protect both the ships and the infrastructure ashore.

Supporting roles

Alarmingly, the U.S. appears to lack adequate supporting infrastructure to maintain the fleet. Since WWII and the end of the Cold War, naval bases have been shuttered and there remain only four public shipyards able to repair, refit, and maintain U.S. naval vessels. The Navy suffered well over a hundred ships sunk and countless

more damaged during WWII. A robust supporting infrastructure was critical in backfilling these losses with new ships and in repairing and returning to service those ships which could be salvaged. This included most of the battleships which were damaged or sunk at Pearl Harbor. In addition to the public yards and basing facilities, there were numerous private or public/private yards which also contributed to ship construction, building not only warships but logistics support ships as well. Many of these facilities remained in use during much of the Cold War. However, since the early 1990's, as the U.S. sought to cash in on the "peace dividend", many of these facilities have been lost, never to return. Even with a smaller fleet not subject to the rigors of active naval combat, ships have suffered deferred or inadequate maintenance. Ships unable to deploy or which get underway at less than full capability then put more strain on the rest of the fleet which must make up the gap. A fleet at sea is of little value without adequate supporting infrastructure behind it.

One of the sources of naval success in WWII and the late Cold War was the fact that the groundwork had been laid early on to deliver more ships and new capabilities to the fleet. Naval patron Representative Carl Vinson ensured the funding in the prewar years to jump start the naval industrial base, ensuring ever more advanced warships would be slipping down the ways at an increasing rate as the years went on. The Germans and Japanese could never hope to keep up with this construction, leaving their only hope for a favorable outcome in the war to be a quick victory early on before American industrial might was brought to bear. Likewise, when President Reagan was inaugurated, despite diminished naval funding over the preceding decade, much of the

legwork had been done to develop new technologies and advanced ships that needed only adequate funding and the political will to bring them to the fleet in large numbers.

Modern approach: the good & the bad

During the early 21st Century, the Navy had a shrinking fleet. New naval construction was driven by the strategy and vision that the era of naval fleet combat was over. This led to the development of highly complex and expensive ships in fewer numbers and at ever increasing cost. In addition to consolidating risk with a small number of extremely expensive ships, as the volume of new ships constructed decreased, fewer shipyards and fewer skilled workers were needed, resulting in yard closures and reduction in the naval industrial base.

In a bid to maintain the U.S. technological edge, newly designed warships with revolutionary technologies were envisioned and ordered, however, these critical technologies often failed to work as advertised, with the ships being delivered only partially operable after long delays and budget overruns. This left the fleet with gaps in capability as ships came down the ways incapable of deployment or requiring years of tinkering before they could serve any useful purpose. In the meantime, as the navies of potential adversaries grew, the Navy found its quantitative and qualitative edge receding with no immediate prospect of enhancement. As costs exploded, capability stagnated, and vulnerability to peer adversaries increased, CNO Admiral Michael Gilday recently posed the question of whether the U.S. could continue to afford to “wrap \$2 billion warships around 96 missiles tubes.”²⁷¹

²⁷¹ Michael Gilday. “Are We Building the Naval Power the Nation Needs?” Discussion with Robert O. Work. Defense Forum 2019 from U.S. Naval Institute. Washington, D.C. Dec. 5, 2019.

Such programs were conceived and executed with a mindset steeped in Huntington's Transoceanic Phase of naval policy. As the lone superpower with no prospect of challenge by peer naval competitors, the Navy sought to dream big and leap generations ahead in advanced technology. Aircraft and ships were designed with service lives approaching half a century, perhaps necessary given their exorbitant cost, but ill-suited for battle against a capable peer enemy where attrition of such high-end units would be an inevitability. Unsurprisingly, many such efforts at technological revolution turned into bottomless holes which consumed billions of dollars and years of development, never to reach their stated capabilities. While this might be sustainable in an era of stagnant and less-sophisticated national security threats, it was unsuited to an era in which the U.S. national debt skyrocketed and powerful adversaries took to the sea with increasing capabilities. Acquisition during a period marked by the return of the Oceanic Phase of national policy must be geared to larger numbers of more affordable ships, aircraft, weapons, and other assets. The old adage "build a little, test a little, learn a lot," is especially apt. Use of proven, existing technology, incremental advances, and larger numbers of less-expensive ships to supplement the exquisite ships currently in the Navy's battle fleet would help to prepare it for the challenges of a high-end fight at sea.

The Navy should also focus on increasing the survivability of its warships. Modern anti-ship missiles are potent weapons and the hit from a single such missile can result in a "mission kill" even if it does not sink the warship outright. Navy ships during WWII were made to take damage and continue fighting. They were repaired at sea when possible and often quickly turned around in shipyards. This requires not only robust construction, but the availability of tenders and mobile repair facilities which can be

deployed forward, in addition to sufficient repair yards and dry docks in more secure rear areas. Today, the Navy relies almost exclusively on active defensive measures such as close-in weapons systems (CIWS), guns, and missiles to knock down incoming threats. Modern warships are not armored and are more vulnerable to damage than the ships of the WWII era if those active defenses fail or are overwhelmed by an incoming salvo.²⁷² This is especially true regarding the all critical sensors as well as the computer networks which run virtually everything on the ship. Given the cost of each ship and long construction times, Navy ships must have formidable self-defense capabilities and be capable of absorbing a punch and continuing the fight.²⁷³

As discussed earlier in this chapter, the U.S. fleet was homogenized as it became more expensive and complex. This was a marked departure from WWII and the Cold War when the fleet boasted a diverse array of ships and capabilities including powerful surface combatants, aircraft carriers, ASW ships, air defense ships, smaller patrol and escort ships, tenders, mine-warfare ships, and others. This allowed different classes of ships to develop specialized capabilities for their specific roles, increasing effectiveness and overall capability. It also spread risk since the loss of a single role ship did not mean that the fleet lost capability in multiple mission areas, as would happen with the loss of a multi-role ship today. Ships during the previous eras were cheaper, since every ship did not need to load every capability, therefore allowing for a larger fleet. Crews could train

²⁷² Holmes. *Maritime Strategy*. 80.

²⁷³ The previously mentioned *USS Stark* incident is one such example of a mission kill resulting from a missile strike. Mission kill refers to a ship no-longer able to carry out its assigned mission. Another such example occurred during the Falklands Islands War, when an Argentine warplane conducted a successful missile strike, sinking the British Destroyer *HMS Sheffield*. From Jeff Vandenengel. "Fighting Along a Knife Edge in the Falklands." *U.S. Naval Institute Proceedings*. 2019. 145(12).

their specific tasks to a high level of expertise and each ship could be optimally designed to suit its particular mission.

More numerous, cheaper, and specialized ships allowed a program of evolutionary development, rather than revolutionary change, to occur. Incremental improvements could be made and new ship variants were regularly complementing or replacing their predecessors based on lessons learned or technological advancements. This also helped to spread risk throughout the fleet. For instance, ASW is a very dangerous game and a surface ship so engaged faces a high probability of being damaged or sunk by an enemy submarine during wartime. These ships are therefore usually optimized to the task, smaller, and less expensive than high-value surface combatants as they need to be relatively expendable. Loss of such an ASW ship, while unfortunate, is an expected reality of war and would not cripple the overall capability of the fleet. Using the limited number of extremely expensive surface combatants for ASW work risks the loss of a vital asset which could not be easily replaced.

Related to the diversity of ships in the fleet is the makeup of the carrier group. Since WWII, the aircraft carrier has been the primary capital ship of the Navy, whether confronting and defeating enemy fleets or supporting operations and projecting power ashore. During WWII, the Navy fielded a variety of aircraft carriers, including full-sized *Essex* class carriers, light aircraft carriers, and escort or “jeep” carriers. This allowed the Navy to spread forces, risk, and offensive power among nearly 100 aircraft carriers, giving it unprecedented flexibility and power. Throughout WWII and the Cold War, the Navy fielded a diverse airwing of mission-specific aircraft purpose-built to conduct their primary missions. These aircraft were typically long-range and optimized for their role.

Today, like the fleet, the airwing has become homogenized with the F/A-18 and its variants, soon to be replaced by the F-35 Joint Strike Fighter, conducting most types of missions. The specialty fighter or long-range strike platform no longer exists. This simplifies the problem the enemy has to contend with as one aircraft with the same flight profile handles all mission types. Planes with shorter ranges diminish the offensive and defensive capability of the air wing and its supported carrier group, making the entire package less potent in the face of contested seas and airspace.

Modern weapons & threats

The carrier and its air wing had been the center of the battle group since the carrier took over as the preeminent capital ship in WWII. The CVBG, including its carrier, airwing, and escorting ships were designed for battle at sea as well as power projection ashore and were heavily defended, in addition to packing an offensive punch. After the Cold War the carrier battle group evolved to the carrier strike group, which was not designed for sea combat and is ill-suited for operations in a contested environment against advanced enemy naval forces. The discussion about the future viability of the aircraft carrier often overlooks this fact, failing to consider the makeup of the entire strike group. A well-constituted CVBG is very defensible and presents a potent problem with which enemy forces must contend. As WWII and Cold War history shows, combined multi-carrier and multi-CVBG operations deliver a formidable and virtually unstoppable force, presenting the enemy with an almost unsolvable problem. Naval exercises in the 1980's showed that the Navy can use deception measures to protect and hide CVBGs during operations, frustrating enemy scouting and targeting efforts, giving the CVBG a major advantage. As James Holmes has argued, the Navy should consider transitioning

its CSGs back to CVBGs as a more appropriate platform for great power naval competition. Unfortunately, as the carriers continue to get larger and more expensive, to wit the new *Ford* class, risk and capability continue to be consolidated into fewer platforms. The Navy should consider fielding smaller and less expensive carriers as well, which can operate in multi-carrier groups to enhance lethality and capacity and also spread risk.

Complementary to air strike capability is the surface navy's ability to deliver a kinetic punch. During WWII and much of the Cold War, including Korea and Vietnam, this was accomplished primarily through naval gunfire. Warships or destroyers, light and heavy cruisers, or battleships heavily armed with naval guns could punish an enemy fleet and provide invaluable fire support to forces ashore. Naval gunfire support proved critical to supporting Marine and Army amphibious operations on the small islands that dot the Pacific during WWII, delivering a volume and caliber of fire that could not be matched by air or land-based fires. Today, naval guns are a virtual afterthought with VLS-launched missiles providing the Navy's kinetic punch. They have a range which is orders of magnitude greater than that of naval gunfire, allowing ships more stand-off distance as well as allowing kinetic prosecution of targets further inland. The downside, however, is that ships have a limited magazine of VLS missiles which cannot be reloaded at sea.

Modern naval missiles are also extremely expensive relative to naval projectiles and the U.S. maintains a limited inventory of these missiles due to their expense. The overall U.S. missile inventory and production capacity will be insufficient to support long-term fires in support of ground forces ashore in a major or lengthy conflict. As

described by CNO Gilday, “We have developed exquisite defensive capabilities that have a very high cost-per-shot, designed to defeat threats with a very low cost-per-shot.” This is unsustainable “in an era of constrained budgets and facing competitors with similarly sized economies.”²⁷⁴ The U.S. must redevelop the capability to produce munitions and other critical components at scale and an affordable cost. The Navy also needs a forward reloading capability for VLS systems or the ability to platoon cheap, unmanned, networked arsenal ships which can be tethered to a command ships and remain on-station while the arsenal ships rotate to the rear to replenish their magazines.²⁷⁵

In the event the U.S. must conduct opposed amphibious operations, or contested operations close ashore, the Navy lacks the ability to provide the continuous and high volume of gunfire support which previously enabled successful operations. Naval operations in WWII also showed that, despite the use of sensors such as radar and modern technology which should allow detection of the enemy at long range, close-range action in the littorals is still possible. Such battles are like knife fights; fast, vicious, and deadly. Should an American force be caught by surprise, it is possible that it could be engaged within its missile arming range where accurate, high-volume gunfire could decide the day. The Navy’s ability to combat such a threat today is limited and the Navy is left without anything to fill that gap whether in combat at sea or in supporting land-based operations. Limited missile inventories and the large number of missiles which would be expended in naval combat are likely to leave ships unarmed and defenseless after depleting their limited magazines, or at least out of the fight until they can return to

²⁷⁴ Michael Gilday. *FRAGO 01/2019: A Design for Maintaining Maritime Superiority*. Office of the Chief of Naval Operations: Washington, D.C. Dec. 4, 2019.

²⁷⁵ Gilday. “Are We Building the Naval Power the Nation Needs?”

base and rearm. The Navy had previously placed such a value on naval gunfire that it reactivated the WWII *Iowa* class fast battleships in the 1980s, constructing offensive SAGs around them. While the Navy sought to develop a long-range naval gun around which the current *Zumwalt* class destroyer was designed, this effort was abandoned due to skyrocketing costs and problems with the technology.

Throughout history, naval operations have been reliant on technology. The U.S. must continue to explore technological advancement. Since the end of the Cold War, the U.S. has lost some of its technological edge over its competitors. Russia and China are currently developing hypersonic anti-ship missile technology, for which the U.S. Navy currently has no counter. The Navy needs to quickly develop updated defensive and offensive technologies designed for air, surface, subsurface, land, missile, cyber, and spaced base threats. The Navy is currently hard at work on unmanned craft and artificial intelligence in addition to other technologies. Rather than seeking to revolutionize and transform warfare, however, the Navy must look to evolutionary technologies which can be developed and fielded more quickly at reasonable cost. This technology must be robust, survivable, repairable and/or replaceable, as naval forces must be expected to sustain damage in combat. High-performing systems which are overly vulnerable and cannot be fixed at sea may be of little value in battle.

The Strategy

Historical lessons

Naval strategy, which had been ahistorically unconcerned with naval warfare during the early 21st Century, has been returning its focus to great power competition. Both WWII and the Cold War provide examples of effective strategy. However, today's

strategists will have to adapt to modern geopolitical and technological realities. Naval operations studied in the first two cases show us that naval power is inherently offensive. Mahan would argue that, during war, the primary object of one's own battle fleet is the destruction of that of the enemy. This requires achieving at least local superiority when encountering an enemy fleet. While the Navy could generally achieve local parity at best during the early years of the Pacific War, by 1944 the combined U.S. Pacific fleet was virtually unstoppable with the ability to achieve local superiority at the places and times of its choosing. During peacetime, a strong fleet can provide coercive pressure or serve as a deterrent, depending on its use. This was witnessed during the Cold War when the Navy put increasing pressure on the Soviets in virtually all maritime theatres simultaneously. During the GWOT, the Navy's success was mixed. It effectively pressured and struck asymmetric forces on land but its diminished size and lack of focus on potential adversaries at sea minimized its deterrent or coercive effect against other naval forces. It could be argued that lack of an offensive mindset at sea has led to the Navy, despite its capabilities, being seen by its rivals as somewhat of a paper tiger.²⁷⁶

Modern realities

Today, the U.S. Navy no longer has uncontested mastery of the seas but must contend with peer and near-peer naval forces which seek to impose their own will on the strategic situation. The Navy must therefore adjust its strategic approach to deterrence. When it possessed unquestioned naval supremacy upon the conclusion of the Cold War,

²⁷⁶ Examples of adversaries imputing a lack of will to U.S. naval forces include the seizure of two riverine craft and ten sailors in the Persian Gulf by Iran in 2016. Aggressive and unsafe intercepts and maneuvers by Chinese and Russian aircraft and ships against American naval forces without a forceful U.S. response may also lend to the impression that the U.S. lacks the will to use its naval forces effectively. Needless to say, policy objectives and escalation control play a role in American response to such incidents. Nevertheless, they may still contribute to the provocative impression among American adversaries that U.S. forces can be harassed with impunity.

it could afford a strategy of deterrence by punishment, where it used force and punitive action to deter adversaries and bad actors. U.S. naval forces were capable of imposing American will on adversaries at sea virtually on demand. Now, facing the high-technology advanced naval forces of great power rivals, the U.S. no longer has the freedom to use force in a punitive fashion to bend those peer adversaries' behavior to American will. It must therefore pursue a strategy of deterrence by denial. Such a strategy seeks to prevent adversaries from realizing their strategic objectives at a price they are willing to pay by making it too costly or dangerous to engage. Successful execution of a deterrence by denial strategy, however, requires forward presence. Naval forces must be in proximity to the regions where the U.S. intends to assert its influence.²⁷⁷

Maintaining the level of forward presence to successfully execute a deterrence by denial strategy will be difficult given the fleet's limited numbers and its adherence to the OFRP. The Navy has sought recently to introduce the concept of Dynamic Force Employment (DFE) in order to compensate for the limited number of available hulls. The goal of DFE is to be strategically unpredictable to U.S. adversaries and to allow flexibility to surge forces for crisis response as needed while still providing a level of predictability to American allies and ensuring sufficient time for maintenance and upkeep of the fleet. Unfortunately, without an increase in the number of available warships, even DFE is insufficient to ensure the Navy is able to maintain adequate forces forward, a robust surge capacity, and time for maintenance and training.²⁷⁸

²⁷⁷ McGrath. "Making the Fleet Ready for a Peer Challenge."

²⁷⁸ Ibid.

Wargames & specificity

During WWII and the late Cold War, the focus on strategic thought, wargaming, and real-world fleet training were critical to the successful naval strategies which brought victory in those eras. The Navy's interwar Fleet Problems and corresponding wargaming at the Naval War College helped the service to develop doctrine and strategy for the war which was to come. Throughout the early 20th century until WWII, the Navy performed as a complex adaptive system which fostered innovation during a time of rapid technological development.²⁷⁹ Late in the Cold War, the Navy again resumed an aggressive schedule of full-spectrum fleet exercises involving multi-carrier operations and integration with the other services and allied forces. These exercises allowed the Navy to test its capabilities, develop new doctrine and strategy for defeating the Soviets, and served the dual role of deterring and pressuring the Soviets. Most such complex exercises went by the wayside with the end of the Cold War. The Navy should return to conducting large-scale training to develop and test new doctrine and strategy against current likely adversaries in the current era of modern technology and new rising naval threats. CNO Gilday agrees, having ordered the reestablishment of annual fleet battle problems, beginning with Large Scale Exercise 2020. The CNO has directed the Navy to use these exercises to relearn how to fight as a fleet and stated, "these exercises and experiments will inform doctrine and tactics; future fleet headquarters requirements, capacity, and size; and investments in future platforms and capabilities."²⁸⁰

Strategically, the Navy will need to balance between deterrence and the capability to defeat potential enemies in high-end naval combat as well as competing requirements

²⁷⁹ Hone. *Learning War*.

²⁸⁰ Gilday. *FRAGO*.

for presence and regional conflict management in other hotspots around the globe. This challenge is similar to the one faced by the Navy during the Cold War and is not dissimilar to that faced during the GWOT, with the exception that the Navy will need to turn its primary focus back to the sea rather than to strike operations far inshore. The Navy may benefit in its global presence missions by taking a page from Russia and China to employ gray-zone operations below the threshold of open combat. This likely will involve the use of non-military air and sea power, such as the U.S. Coast Guard, and innovative strategies to impose American will at sea without employing overt military force.

The Coast Guard has a worldwide mission and has operated independently and in support of naval operations abroad throughout its history. The Coast Guard played a key role in WWII, escorting convoys in the Atlantic, and also held important roles in both the Cold War and the GWOT. Given its dual military and civilian missions, Coast Guard presence can supplement naval presence. Coast Guard ships can show the flag and have the potential to use force if needed but may be seen as less provocative than naval vessels. This may be especially true in the South China Sea, where China utilizes its own China Coast Guard as well as other non-military vessels to exert its influence and bully its smaller neighbors short of exercising outright naval force. Likewise, the Arctic is becoming more accessible due to changing climactic conditions. The Arctic's rich resources and the potential of newly open sea routes have attracted the attention of Russia and China. Increased presence of the U.S. Coast Guard, including icebreakers, can exert

U.S. influence in the Arctic without overly militarizing this area and inviting a similar response from potential adversaries.²⁸¹

U.S. naval strategy must, however, focus specifically on potential U.S. adversaries and include specific strategic and operational approaches to each. This means primarily China and Russia, as well as Iran and any other regional threats which may arise. Employing a generic strategy which does not focus effort on defeating specific enemies in specific regions is useless. Strategy, doctrine, and tactics must be developed, promulgated, and practiced to account for enemy strategy, enemy tactics, enemy capabilities and technology, geography of the specific area of operations, and U.S. national policy and strategic objectives. Additionally, the Navy must discard any remaining vestiges of its 1992 strategy, ...*From the Sea*, which imagined that naval combat had become obsolete. The Navy must prepare for naval operations at sea as well as the support of joint operations in all other domains with the other services. While there should be some overlap between peacetime and wartime strategies, they should be complementary as the Navy must prepare for war while maintaining and promoting peace. While the Navy must focus on defeating enemy fleets in decisive battle, “the seat of purpose is on the land” and naval operations must be conducted with ultimate, typically land-based, strategic goals in mind.²⁸² Towards this end, a few specific ideas merit additional discussion.

The first is distributed maritime operations, or DMO. This operational concept has some promise but there are trade-offs and disadvantages as well. The primary

²⁸¹ Brian Smicklas. “Guard the Coast from High-End Threats.” *U.S. Naval Institute Proceedings*. 2019. 145(2).

²⁸² Hughes and Girrier. *Fleet Tactics*. 24-26.

advantage is that it spreads offensive capability as well as risk throughout the fleet, thus complicating enemies' scouting and targeting process, giving them a harder problem to solve. The enemy would be unable to focus on just a handful of ships but would have to contend with a diverse U.S. offensive capability spread throughout the fleet, including smaller ships, support ships, and perhaps even concealed on non-military vessels. This could also assist the Navy in spreading its presence and capability beyond the limited reach of a smaller number of high-end surface combatants. Additionally, distributed forces could assist the Navy with more effective scouting. In naval combat, scouting is critical to attacking effectively first, one of the cornerstones of naval warfare.²⁸³ The Battle of Midway provided an excellent example of the effect of good scouting and striking effectively first.

The disadvantages, however, are that the Navy may not have enough ships to make this truly effective. Forward reloading capability and missile inventories are lacking. Additionally, DMO requires the integrity of networked communications to coordinate offensive action. The more dispersed the forces, the more difficult communication becomes, especially when it can be assumed that advanced adversaries such as Russia and China will exert every effort to disrupt the communications networks on which U.S. forces rely. The potential disruption or denial of U.S. military communications networks is a major vulnerability. China and Russia are both pursuing advanced capabilities to disrupt networks, including hampering or destroying the satellites on which U.S. naval and military forces rely for communications, surveillance, and guidance. The addition of space as a warfare domain adds a new layer of

²⁸³ Ibid. 29-34.

vulnerability for an advanced naval and military power such as the U.S. In addition to the risk of networks being disrupted, ships will often have to operate under EMCON conditions to minimize their detectability by the enemy. While this would not prevent the passive receipt of messages, it may prevent effective command, control, and communications by limiting two-way communications. Examples of the negative impact these deficiencies can have on naval forces were seen in the previous chapter.

Preparing for a contested environment

A cornerstone of naval warfare is that doctrine is the glue of tactics.²⁸⁴ Concentrating previously dispersed forces into a larger battle group can prove difficult when commanders and ships are not practiced at working together. Robert Rubel considered the effect network-denied operations will have on future naval combat, negatively impacting command and control of dispersed forces. The Navy's DMO concept appears to intend structured battle, even with dispersed forces, while the lack of command and control caused by network denial will more likely lead to generally less desirable actions such as sniping or melee type battle. He argues that the Navy must plan for such a situation and develop appropriate doctrine, with commanders providing mission-type orders which will allow independent naval forces to use individual initiative to advance strategic objectives despite a loss of connectivity.²⁸⁵ Failure to effectively institute fighting doctrine for this environment could lead to melee battle, which increases risk, is uncoordinated, unpredictable, often confused, and could limit the effect of

²⁸⁴ Ibid. 20-23.

²⁸⁵ Robert C. Rubel. "Mission Command in a Future Naval Combat Environment." *Naval War College Review*. Spring 2018. 71(2); 109-121. Rubel identifies the three modes of naval battle as *structured battle*, which "indicates coordinated action among the units of a force," *melee battle*, "in which each unit fights on its own without coordination with others," and *sniping*, which is "ambush warfare".

advanced U.S. capabilities. Finally, there is the possibility that spreading offensive power onto smaller ships which may be operating alone, or outside the protective bubble of a larger task group, could lead to engagements with superior enemy forces which could result in U.S. forces being defeated in detail. In other words, an enemy fleet which is less powerful overall than the U.S. Navy could still achieve local superiority over smaller, less capable naval units, resulting in their defeat. While the DMO concept does offer some promise, these issues must be worked out for it to prove effective in combat.

Another strategic concept is the Marine Corps' EABO. Taking a page from U.S. joint operations in the Pacific during WWII, the Marines plan to occupy, or prepare to seize, key maritime terrain in the Pacific where they can establish local bases from which to support naval sea control efforts and A2AD objectives. The Commandant of the Marine Corps, General David Berger, recently issued his strategic guidance to the force. The Commandant's vision embraces integration with naval forces to exercise this concept in support of larger naval strategy.²⁸⁷ This concept compliments DMO in that Marines ashore would deploy anti-ship and anti-air sensor and missile systems ashore on key maritime terrain which could be used against PLAN forces. These forward bases would serve as virtual unsinkable ships which could attack the enemy or deny it access to operate in areas where the U.S. is excluded. Geography argues for the merits of this approach. China is largely penned in by the first island chain. The second island chain centered around Guam in the Mariana Islands provides the U.S. and its allies the ability to control strategic maritime choke points further into the Pacific. Effective use of this

²⁸⁷ David H. Berger. *Commandant's Planning Guidance: 38th Commandant of the Marine Corps*. United States Marine Corps: Washington, D.C. July 16, 2019. and David H. Berger. "Notes on Designing the Marine Corps of the Future." *War on the Rocks*. Dec. 5, 2019. <https://warontherocks.com/2019/12/notes-on-designing-the-marine-corps-of-the-future/>.

geography could limit PLAN freedom of maneuver and ability to project power beyond their near seas. The Pacific is a vast area and the Navy cannot effectively cordon this maritime perimeter with ships alone. It would be spread too thin and it would be too easy for Chinese forces to slip through the gaps. A ring of sensors and offensive weapons based on these islands, however, could more effectively close these chokepoints while the fleet remains concentrated and mobile. The fleet can then be prepared to confront the PLAN in Mahanian fashion when and where the PLAN tries to break this cordon or when operationally appropriate. Finally, the establishment of an effective American A2AD ring could protect U.S. and Allied forward bases by keeping enemy forces at extended range. Based on the old adage, “a ship’s a fool to fight a fort,”²⁸⁸ establishment by Marines of hardened forward bases which can project power at extended range could effectively help keep PLAN naval forces at bay.

Any naval strategy or operational concept employed by the U.S. must account for attrition and the reality that ships will be lost in battle. This means not only preparing to replace those ships and personnel lost in combat, but psychologically preparing to incur significant losses of both ships and personnel. The Navy has not lost a ship to enemy action in decades. Major war will likely result in the loss of major surface combatants and even aircraft carriers. Naval leaders must be prepared for this and must be willing to assume risk and even lose ships when necessary to accomplish key strategic objectives. Lack of willingness to take risk can be just as inimical to victory as recklessness. The Navy must plan and train its commanders to assume operational risk where appropriate.

²⁸⁸ Hughes and Girrier. *Fleet Tactics*. 26-29.

Higher echelon naval and civilian leadership must not punish commanders taking such risk, even where it results in loss of naval forces if such risk is assumed responsibly.

Finally, the U.S. must emphasize the training of its personnel and the selection of leadership. Naval theorists and strategists from Mahan to Hughes and Girrier have recognized that perhaps the most critical factor in naval warfare is the quality of personnel.²⁸⁹ Sailors must be well trained, capable, courageous, and motivated to succeed. They must be well led. Leaders must understand strategy, doctrine and tactics. They must know when to be aggressive and when to avoid battle. Training and preparation of sailors must start before battle ever begins and must continue throughout hostilities. One factor which doomed Japanese efforts during WWII was their inability to adequately train replacement pilots, which left the IJN air arm totally over-matched in quality and quantity of personnel. Ultimately, Japanese leadership felt their airmen were more valuable as human bombs in suicide kamikaze attacks. The U.S. however, continued to push out quality pilots in addition to ever improving aircraft. Likewise, Japanese leadership at sea was often inferior to U.S. leadership, especially at the flag officer level. The GWOT, on the other hand, provides examples where inferior training cost the U.S. the loss of 17 sailors and two warships due to poor seamanship in peacetime conditions. The Navy must refocus on developing essential maritime skills as well as warfighting ability. Training and leadership can mean the difference between victory and defeat.

²⁸⁹ Alfred Thayer Mahan. "The Strength of Nelson." August 1905. *21st Century Mahan: Sound Military Conclusions for the Modern Era*. Benjamin F. Armstrong, ed. Naval Institute Press: Annapolis. 2013; 140-141. and Hughes and Girrier. *Fleet Tactics*. 18-19.

In summary, analysis of the three historical case studies, WWII, the late Cold-War, and the GWOT through 2017, reveals that the Navy is ill-prepared for the rigors and challenges of great power competition. It is far too small, its technological edge has receded, and it has been strategically adrift over the preceding decades. Additionally, acquisition has been plagued by skyrocketing costs and increasing complexity. The Navy risks being a hollow force unless sufficient course corrections can be made. The foregoing analysis lends itself to several recommendations which may help in this endeavor.

Recommendations

Based on the information learned from the case studies and the resultant analysis, several recommendations can be made to prepare the U.S. Navy to succeed in this renewed era of great power competition:

- Construct more warships
- Make warships more survivable
- Diversify the fleet by building ships designed for specialty roles
- Build less expensive, less complex ships with evolutionary technology that can be quickly constructed
- Modernize infrastructure and partner with private shipyards to build and maintain the fleet
- Reorganize the fleet around CVBGs as opposed to CSGs
- Reintroduce naval gunnery to the fleet by adding guns to existing ships and/or constructing purpose-built gunships

- Increase naval missile inventories and develop a forward reloading capability
- Harden and prepare to defend forward bases
- Prepare to operate in a network denied environment
- Emphasize wargaming and real-world fleet problems to develop tactical doctrine based on modern technology and naval capabilities
- Diversify the carrier airwing and extend its range
- Invest in personnel, training, and leadership
- Support joint ventures such as operational integration with the Marine Corps or greater Coast Guard usage to increase overall sea power.

Conclusion

The current and previous chapter sought to answer the question of whether the U.S. Navy is ready for the challenges of great power competition by reviewing three historical case studies. The answer is no, the Navy is not currently ready to meet the requirements of great power competition. After an analysis of the case examples, this study put forth a series of recommendations which can help the Navy increase its readiness for the challenges that great power competition will present. On December 4, 2019, CNO Admiral Michael Gilday issued his updated guidance to the fleet, *FRAGO 01/2019: A Design for Maintaining Maritime Superiority*.²⁹⁰ This guidance recognizes that the Navy is not ready for the demands of renewed great power competition but it charts a course for the Navy to follow as it rights the ship and prepares to fight and win at sea whenever and wherever called upon by the nation. In his *FRAGO*, Adm. Gilday hit

²⁹⁰ Gilday. *FRAGO*.

on many of the themes addressed above including infrastructure ashore, maintenance, training, innovation, leadership, and strategic development.

While the Navy's lack of preparedness today is alarming, one must remember that the Navy has often found itself wanting at the outset of conflict. U.S. naval power was not where it needed to be at the time of the Pearl Harbor attack and its naval power ebbed and flowed during the Cold War prior to the Reagan defense build-up which helped it win the Cold War. The Navy lost its historic grounding in naval combat in the immediate post-Cold War era, however an extensive review of literature and conversations among navalists and naval professionals reveals that the Navy today is not bereft of strategic thinkers. Far from it. Naval leadership should seek to draw from and empower those within the sea services to lead the way and guide the Navy to future success.

The good news is, with an emphasis on agility, Navy leadership seems to understand the problem with the Secretary of the Navy and the new CNO committed to charting a course to strengthening American naval power and readying the fleet to fight today, and when called upon in the future.

Conclusion

Studying historical examples should enable us to view current issues and trends through the broader perspective of the basic elements of strategy. Approaching today's problems through a study of the past is one way to ensure that we do not become trapped within the limits of our own experience. We will not be concerned with history as chronology, but with its relevance and application to today and tomorrow.

-Admiral Stansfield Turner, 1972²⁹¹

A good Navy is not a provocation to war. It is the surest guaranty of peace.

-President Theodore Roosevelt, 1902²⁹²

The preceding chapters examined and discussed the naval aspects of American sea power through the lens of historical case study. Each case provided valuable insight which is useful as we think about American national security into the future. The cases illustrated past successes, what was required to achieve those successes, and the challenges and problems which were encountered along the way. It is hoped that consideration of this history will help to inform policy and strategic decisions going forward as the United States faces a threat environment and challenges to its national security which are at least as complex as any it has previously faced.

Thesis statement

This paper sought to answer the question of whether American sea power was sufficient for the challenges of great power competition. It concludes that no, U.S. sea

²⁹¹ Stansfield Turner. "Challenge: A New Approach to Professional Education." *Naval War College Review*. 1972; 25(8), Article 1.

²⁹² Theodore Roosevelt. "Second Annual Message." Dec. 2, 1902. *The American Presidency Project*. <https://www.presidency.ucsb.edu/node/206194>.

power is not currently sufficient to meet those challenges. American sea power has diminished significantly since the end of the Cold War. The loss of sea power relative to rising great power competitors risks the ability of the U.S. to adequately advance or even defend its national interests in war or in peace. China seeks to appropriate to itself, through its excessive maritime claims in the South China Sea, some of the busiest waterways in the world as well as a seabed rich in resources. It is rapidly growing the naval capability to enforce those claims and exclude the U.S. from the ability to support its allies in the region, come to the defense of Taiwan as obligated by treaty, or enforce the generally accepted freedom of the seas. Russia's newly capable submarine fleet can likewise hold at risk U.S. maritime assistance to eastern European allies subject to Russian mischief, the critical SLOC to support NATO in the event of conflict, or even vital American infrastructure ashore. Reinvigorating American sea power requires a significant national investment which is only possible through an engaged public driving political will. Before expanding on that conclusion, a brief summary of the research is in order.

Chapter 1 – American sealift

The research began with an examination of American sealift capability and the importance of sealift to the American way of war. The decision to begin this paper with sealift, rather than naval combat power, was a deliberate one. The topic is often neglected as the discussion of supply ships and the carrying of cargo is less glamorous than talk about aircraft carriers and guided missile destroyers. Sealift is crucially important, however, and enables virtually all U.S. overseas force projection, which means

America's military might. It is the critical link in the chain which, if broken, would leave U.S. allies stranded and its military forces out of gas, ammo, and supplies. There is a consensus in the literature that American sealift capability is inadequate. In addition to a small, aged fleet of government sealift vessels, the civilian merchant marine has also dwindled along with the maritime industrial base. This will have repercussions on the ability of the U.S. to supply its forces and allies in the event of a peer conflict.

The research included three case studies beginning with World War II. The Battle of the Atlantic illustrated the extreme effort necessary to keep the SLOC open in the face of a concerted attempt to strangle the flow of critical supplies across the sea. A great many Allied ships were lost. It was not until U.S. industrial might kicked into high gear, putting large numbers of ships to sea, implementing effective convoy and offensive tactics, and the availability of new technology, that the Allies turned the tide of battle. In the Pacific, the U.S. SLOC were never threatened by the Japanese the way they were in the Atlantic, while the U.S. itself engaged in a highly successful war against Japanese shipping. WWII thus illustrated the importance of maintaining one's maritime logistics chain along with the factors which can bolster or hinder that effort.

Both the Tanker War and Falkland Islands campaigns illustrated the nature and threats of modern naval combat to merchant and logistical shipping. The Tanker War demonstrated the challenges of operating in a congested littoral environment and the amount of naval resources required for effective convoy operations. The British faced challenges in the Falklands as they operated far from home with a diminished sealift capacity, lacked forward basing, and enjoyed little allied assistance.

The chapter concluded that the U.S. needs to build up its infrastructure ashore to construct, repair, and maintain the ships essential to its sealift capability while also recapitalizing and increasing the size of the various components of its sealift fleet. Efforts also must be made to recruit, train, and retain skilled mariners who can crew these vessels in a time of war. Finally, the Navy must figure out how it will protect its SLOC and maritime logistics chain and the sealift fleet must learn and equip itself to operate in a contested environment.

Chapter 2 – American naval power: WWII and the Cold War

Chapter 2 examined the preparedness of the U.S. Navy, particularly its surface combat fleet, for the challenges of great power competition. The chapter looked at two eras of peer competition and American naval success in which large fleets, innovation, aggressive leadership, and successful strategy drove U.S. dominance at sea. These eras provide much insight into what it takes to be successful in this type of contested maritime environment. While the Navy should not seek to refight the wars of the past, it should learn the lessons of its history as it faces future challenges.

American success in World War II rested on the foundations laid in the preceding decades, from the Fleet Problems of the 1920s and 1930s, to the passage of legislation expanding the fleet, to nearly four decades of internal innovation as a complex adaptive system. As the fleet grew, the Navy successfully waged war in two major theatres, securing the trans-Atlantic SLOC while simultaneously pushing the Japanese Empire back across the Pacific. The fleet swelled to nearly 6,000 ships by the end of the war,

with corresponding logistics support and infrastructure ashore to build, maintain, and repair the vast and diverse fleet, keeping it on the offensive.

The war saw the introduction of modern technology including sensors, computers, and advanced weapons, for which the Navy developed doctrine and tactics. The Navy was led by capable leaders and manned by competent and well-trained sailors. U.S. naval strategy benefitted from its prewar preparation. Its victories were hard fought, including costly setbacks along the way and the loss of many ships and men. The Navy, however, proved resilient and, backed by the industrial might of the United States, fought its way to victory.

Decades later, after years of lean budgets, force drawdowns, and the lingering effects of its Vietnam War operations, the Navy of the late 1970's was at a low ebb. At the same time, the Soviet Union had developed a powerful blue water navy which achieved parity with the U.S. Navy, whittled away the American technological edge, and contested the U.S. naval mastery of the sea. The Navy's fortunes changed, however, with the Reagan Administration's buildup of U.S. naval and military forces and the implementation of the Maritime Strategy. This strategy reinvigorated the U.S. Navy, which operated dynamically, aggressively, and relentlessly around the globe, pressuring the U.S.S.R. by reclaiming U.S. dominance at sea.

During the 1980's, the Navy grew to a fleet of nearly 600 warships and was modernized with advanced weapons and sensors which helped the Navy reclaim its technological advantage. Large scale fleet exercises were conducted around the globe, demonstrating U.S. capabilities and simultaneously developing updated naval warfare doctrine and tactics that would enable it to win at sea.

This had the desired effect, putting unrelenting pressure on the Soviets. The U.S. demonstrated that it could effectively use its maritime dominance to enable strategic freedom of maneuver and call into question the Soviets' submarine based nuclear deterrent. In the end, the Soviets gave up on trying to keep up with the U.S. Navy, ceding the maritime balance of power to the U.S. and its allies, contributing to the end of the Cold War.

Chapter 3 – American naval power: GWOT and today

The third chapter examined the years from 2001 through 2017, which contrast with the previous two eras in that the U.S. faced no peer rival at sea. The fleet went from its Cold War peak in the early 1990s to an historic low by the end of the period. The Navy's strategy for this new era, ...*From the Sea*, envisioned the end of naval combat at sea. The strategy set forth the Navy's posture going forward, which centered primarily around power projection ashore.

After the attacks of 9/11, the Navy provided a flexible, mobile, and powerful capability which contributed valuable support to operations ashore. Despite decreasing numbers, its operational tempo remained high as it supported the various war efforts while maintaining its forward presence and peacetime constabulary duties. This strained the force and corresponded with a consolidation and decline of infrastructure ashore.

The Navy homogenized the force, combining functions and capability in a limited number of complex and expensive, multi-purpose warships. This consolidated risk and limited the ability to spread capability around the globe. Certain naval capabilities were virtually ignored or downgraded as the Navy faced no peer or technologically advanced

adversaries. Simultaneously, the Navy built expensive, revolutionary new ships which promised to transform naval warfare. These promises largely failed to materialize after billions of dollars spent and new capabilities remained unrealized, leaving large gaps in the fleet. Available funding for simpler and more reliable capabilities and regular operating expenses was thus limited, having lost budget share to these technological flights of fancy.

These factors culminated in the summer of 2017, with two separate fatal collisions in the western Pacific. While these tragedies garnered most of the headlines, other evidence of problems in the fleet emerged including deferred maintenance, overstretched personnel, and a force which could no longer effectively meet the demands placed upon it, even during a time of relative peace. The year 2017 coincided with the release of the President Donald Trump administration's National Security Strategy, which shifted American strategic focus to the reemergence of great power competition.

Meanwhile, both China and Russia were becoming more aggressive and capable at sea. Both nations posed increasing threats to the Navy and U.S. national interests as they upgraded their naval capabilities and other threats such as Iran, North Korea, and international terrorism continue to present complex problems to the U.S.

The chapter concludes with an overall analysis of U.S. naval capability across the three eras studied in order to draw lessons for today. These conclusions involve strategy, investment, fleet composition, infrastructure ashore, and training. U.S. naval efforts in WWII and the Cold War provide several lessons and pathways to future success for the Navy. Its ahistoric shift from focusing on traditional naval combat after the Cold War set the Navy down the wrong path. Understanding how it got to where it is today is

necessary to right the ship and prepare to deter and defeat, if necessary, America's adversaries. Fortunately, the Navy's leadership seems to grasp the challenge before it, including making difficult decisions and implementing solutions.

Conclusions

After examining the topics of U.S. sealift and naval capability through the lens of historical case study, this author concluded the U.S. is not prepared for the challenges of great power competition. The U.S. possesses neither the sealift capability nor the navy to reliably protect American interests and national security given these challenges. This issue has been developing for some time due to both conscious decisions made by U.S. civilian policy makers and naval leadership, as well as through events over which the U.S. has little control. Incredible success can often sow the seeds of future crises, as the efforts and ingredients which enabled that success, especially when costly, are neglected to the point of imperiling the continuation of that success.

Domestically, the U.S. public has been largely ignorant of its sea power, the importance of its sea power to the U.S. economy and national security, the state and decline of its sea power, and the requirements for its upkeep. This has been a recurring theme through much of American history, leading to ebbs and flows of sea power and corresponding naval strength. Externally, as the lone superpower with unrivaled naval power, the Navy became the target of ambitious, well resourced, and highly advanced competitors who developed their own capabilities to fight and win at sea to advance their plans to upend the American-led world order. While the Navy's eye was on fighting

terrorists, it lost its strategic focus on other rivals who were rapidly diminishing the Navy's edge and who saw the U.S. Navy as the chief opponent to their own objectives.

The goal of this research was to inform the reader using the lens of history as to why and how the Navy was previously successful in order make the case for what must be done to strengthen the Navy today. While there may be no grand revelations or new ground broken, it is apparent that policy makers have not fully mined these lessons of history. For instance, a recent Defense Department study recommends not only cutting the number of aircraft carriers and limiting the size of the fleet of high-end combatants but relying on unproven technology in unmanned systems and ships to fill the gaps.²⁹³ This is not only counter to the lessons on the importance of numbers and fleet size, severely limiting the capability of the fleet, but assumes a great deal of technological risk rather than investing in proven technology and capability. While unmanned systems do and will have a role to play, overreliance on these systems, especially with the likelihood of operating in network denied environments, before they have been tested, proven, and doctrine for their use developed appears to be folly. A stronger U.S. Navy should be one of the top priorities for executing the 2017 NSS and 2018 NDS and should be one of the nation's top national security priorities overall.

The case studies sought to survey a broad spectrum of conflicts and eras across the 20th Century to find commonality and lessons that apply to today's threat landscape. Whether a future war is global and wide-ranging like World War II, or short, violent, and decisive is unknown. There are many examples in history of wars in which a quick

²⁹³ David B. Larter. "Defense Department study calls for cutting 2 of the US Navy's aircraft carriers." *DefenseNews*. April 20, 2020. <https://www.defensenews.com/naval/2020/04/20/defense-department-study-calls-for-cutting-2-of-the-us-navys-aircraft-carriers/>.

conclusion was anticipated but instead dragged on for years with massive devastation and countless lives lost. What does this mean for naval preparedness and American sea power? Despite the fact that both China and Russia are nuclear powers, it remains very possible that a major war could be fought which does not trigger nuclear escalation. While escalation is always a possibility, a war confined largely to the maritime domain, which does not threaten invasion and occupation of the combatants' home territory or present an existential threat to the ruling regimes, could likely occur without crossing the nuclear threshold.

Even in the event of such a protracted war, it is unlikely that the Navy will need anything close to the 6,000 ships of WWII, but it will need more than it has today. The Navy needs to increase its capability as soon as possible because a war could be short and decisive. If the Navy does not have what it needs to win at the onset of hostilities, it could lose badly, which would be devastating for U.S. national security and the American led world order. On the other hand, it also needs the infrastructure and ability to keep fighting longer than may be anticipated. Wars do not end until one side achieves its objectives, decisively denies the enemy its objectives, fails to keep up with the economic costs of war, or the population demands an end to the war. Any future war is unlikely to end with the unconditional surrenders of WWII but with some combination of the above factors. The U.S. must ensure that the Navy and American sea power can hold up their end against a determined and powerful adversary. The research suggests, however, that they will not be ready absent some improvement.

The conclusions reached during the course of this study identified several broad areas of U.S. deficiency: readiness, fleet size, fleet composition, infrastructure ashore, strategy, and doctrine and training. Each of these areas will be briefly discussed below.

Readiness

Fleet readiness has declined over recent years as diminished resources, a smaller fleet, and high operational tempo have strained the force. The corrosion caused by seawater and the maritime environment's salt air wage a constant battle on the fleet, one which requires regular maintenance to beat back. The effects of corrosion are compounded by the regular wear and tear of continual operation. Unfortunately, reduced manning and delayed or deferred maintenance have taken a toll on the fleet and reduced readiness. Loss of readiness has hollowed out the force, leaving it unprepared to adequately carry out its national security mission.²⁹⁴

During the preceding decades, the Navy relentlessly pursued efficiency. The Navy was not alone as the Air Force, another technology driven service which lacked a peer adversary, did the same. The focus on efficiency in both services drove an increased effort to do more with less, ultimately putting a severe strain on the forces. As in the Air Force, the Navy's focus on cost cutting, through initiatives such as optimal manning which dramatically reduced the number of personnel on ships, degraded operational readiness. While problematic even in peacetime, the consequences of this

²⁹⁴ Justin H. Witwicki. "The United States Navy as a 'Hollow Force': An Assessment of Naval Readiness from 2010 to 2017." Masters thesis. Johns Hopkins University. 2019.

approach would be devastating in war, with resilience and survivability of the force sacrificed for a perceived increase in efficiency.²⁹⁵

The sealift fleet also suffers from debilitating readiness issues owing in large part to the age of the fleet. While a significant portion of this fleet is regularly at sea operating in support of the Navy and other combat forces, the reserve fleet faces a different challenge. These ships are the oldest. While they are supposed to be kept ready for activation and able to get underway in a short time, sitting for extended periods pier side or at their moorings creates maintenance issues. The readiness of the sealift fleet was recently brought to the fore during a surge activation exercise which resulted in an unacceptably high failure rate. This does not bode well should the U.S. need to move its forces quickly in the event of a major crisis.

Fleet size

The size of both the U.S. sealift and naval fleets are inadequate for the great power challenges they face. Numbers are important in terms of sea power, especially for the U.S., with interests, allies, and national security objectives around the globe. Despite increased technology, modern communications, and cutting-edge ships, the oceans are vast. Around the world, a majority of the regions of strategic interest on land lie adjacent to or near the water. Ships still require days and weeks to travel from place to place by sea. Any one ship can only be in one place at a given time. Transit times to other locations are predictable and often lengthy. Therefore, no matter how much cargo one ship can carry or how capable the warship, it is limited by its ability to be in any one place at a time and by the time required to travel to where it needs to be. The U.S. must

²⁹⁵ Jake Alleman. "The Siren's Call: Flaws of Efficiency." *War on the Rocks*. Feb. 28, 2020. <https://warontherocks.com/2020/02/the-sirens-call-flaws-of-efficiency/>.

therefore have enough logistic and combat ships to mass sufficient capability when and where needed while maintaining the capability necessary to meet other national security goals around the world.

Despite this fact, and the inevitability of diminishing naval and defense budgets which will likely curtail new ship construction, the Department of Defense is considering cutting the number of aircraft carriers by nearly twenty percent and potentially reducing the number of cruisers and destroyers.²⁹⁶ While these ships are expensive to operate, they bring tremendous capability in both peace and war. Arguments that these ships are too expensive to risk in a high-end fight do not favor reducing the size of the fleet, which would make the remaining ships all the more irreplaceable. The existing fleet of advanced ships should not be cut, especially if the limited amount of new construction will focus on smaller, less-costly ships. Likewise, rather than putting all of its eggs in the unmanned systems basket, the Navy should instead invest in proven, manned ships, systems, and technologies. This will minimize technological risk as well as the potential to repeat the errors of recent revolutionary technology acquisition failures.

The U.S. also requires enough ships to transport the resources, equipment, and supplies it needs to enable its forces abroad, support and sustain those forces, and support its allies as needed. The Navy must be able to achieve local naval superiority at decisive places and times to deter or defeat enemy naval forces so that it may seize control of the sea, thus enabling its larger strategic objectives. These objectives require having not only a sufficient number of ships at sea but also enough ships to allow for regular maintenance and repair in facilities ashore and to conduct training at sea. Additionally, during

²⁹⁶ Larter. "Defense Department study".

wartime, these numbers must account for the inevitable attrition which will result from enemy action, to include ships requiring lengthy repair due to battle damage or lost at sea.

The U.S. sealift fleet, and the civilian merchant fleet which supports it, have greatly diminished over the past several decades. It is an open question whether the U.S. would be able to provide the necessary logistical support to sustain combat operations abroad, especially in a protracted conflict. Likewise, the U.S. naval fleet is at a historic low. New ships are being built at an anemic rate that may be suitable for peacetime but is not sufficient for the needs of a fleet facing opposition from highly capable peer adversaries. A low demand for new construction results in a lower supply of shipyards and shipbuilding infrastructure as the yards cannot afford to sit idle. A recent projection has China, whose shipbuilding industry is massive and whose navy is growing at a rapid pace, putting to sea the world's largest navy by 2035, surpassing that of the U.S.²⁹⁷ (The Congressional Research Service indicates this is already the case). This is a very real threat to the Navy's ability to fight and win at sea, equating to a major threat to American interests and national security objectives. While U.S. law commits the Navy to growing to a 355-ship fleet (up from less than 300 today) and the Navy has set a goal to arrive at this number by 2030, it does not have the money to meet this ambitious but important objective.²⁹⁸ The size of the fleet clearly remains a major issue.

²⁹⁷ Michael A. McDevitt. "China's Navy Will Be the World's Largest in 2035." *U.S. Naval Institute Proceedings*. 2020; 146(2).

²⁹⁸ Megan Eckstein. "Lawmakers Say New Budget Hurts Competition with China for Naval Power, Shipbuilding." *USNI News*. March 4, 2020. <https://news.usni.org/2020/03/04/lawmakers-say-new-budget-hurts-competition-with-china-for-naval-power-shipbuilding>.

Fleet composition

Related to fleet size is fleet composition, which applies across both the sealift and combat fleets. As fleets shrank, individual ships increased capacity and capability. Sealift cargo ships have grown larger, mirroring the general growth in size of modern merchant ships over their predecessors. This is a boon to efficiency, reducing cost per ton of cargo and allowing the carrying of larger quantities by fewer ships. It has also perhaps masked the vulnerability faced by the U.S. The current fleet of maritime logistics vessels is ageing, with a majority of the ships nearing the end of their useful service lives. Not only will they need to be replaced but, as they age, they are more likely to suffer material casualties which will take them out of operation by either requiring repair or preventing them from sailing. Increased capacity among a decreasing fleet consolidates risk among a much smaller number of ships. The inability of a ship laden with essential equipment or war materiel to sail or worse, its loss to enemy action, could have debilitating effects on larger strategic objectives.

During WWII, hundreds of merchant and logistic ships were lost at sea to enemy predation. During the Falkland Islands campaign, the loss of just one support ship had serious consequences for British operations ashore. Both China and Russia field large and capable submarine fleets which could wreak havoc on American SLOC and maritime logistics. American sealift ships are too precious to lose, a vulnerability the U.S. cannot afford in the event of a peer war at sea.

The Navy suffers from a similar problem with its surface combatants. Each individual warship is extremely capable. In fact, the U.S. has the most advanced warships in the world and still possesses more such warships than China and the rest of

the world combined. This capability comes however, with exorbitant cost and complexity. The advanced capability of these exquisite warships relies heavily on advanced technology. Navy warships are increasingly vulnerable to both the high-tech efforts of enemy forces to disrupt the networks on which they rely as well as the age-old threat of physical damage from naval combat. Modern naval ships are not designed to sustain heavy damage from combat at sea. They are more suited to conducting unopposed operations in uncontested waters secured by the U.S. naval dominance of the post-Cold War world. That period has passed, leaving the Navy ill-prepared for the future with a fleet designed for a bygone era. As Captain Brent Sadler notes, “Wars expose false assumptions and misplaced peacetime priorities.”²⁹⁹ Similar lessons have had to be learned throughout U.S. naval history. A fleet structured for uncontested peacetime operations at sea will not be sustainable in the event of war.

During WWII, naval ships were expected to sustain heavy damage in combat, conduct damage control measures and repair when possible, and keep fighting until they could limp back to port for maintenance ashore. Today, relative to other navies, U.S. warships are robustly built and American sailors are skilled at damage control, as illustrated by the response to modern naval tragedies from the 1980s to 2017. That said, while computerization provides many benefits, it also comes with increased risk that the damage sustained in battle cannot be repaired by sailors at sea but requires specialized personnel and equipment to get back on line, both of which are costly and in limited

²⁹⁹ Brent Sadler. “Is Navy Picking the Right Leaders for Great Power Competition?” *U.S. Naval Institute Blog*. March 9, 2020. <https://blog.usni.org/posts/2020/03/09/is-navy-picking-the-right-leaders-for-great-power-competition>.

supply, especially in a war zone. Lack of armor and passive defensive measures to limit damage from successful enemy strikes only increases the Navy's vulnerability at sea.

Offensively, modern precision munitions including air, submarine, and surface launched missiles have a very high cost per shot. There are limited inventories in the U.S. arsenal and a limited capability to produce these munitions at scale. Naval surface ships rely on the vertical launch system to deliver their firepower, but VLS magazines cannot be reloaded at sea, requiring a port visit to a facility capable of reloading them. As a result, these expensive warships are not only unlikely to continue fighting if they sustain significant damage in battle, they are also likely to quickly deplete their magazines with no ability to quickly reload and stay in the fight. The Navy has largely abandoned naval guns with the exception of a single five-inch gun on its destroyers or a five-inch gun both fore and aft on its cruisers. In the missile age, naval guns have been largely seen to be obsolete. That may not be accurate, however. Modern naval and land-based guns can fire cheap munitions of different varieties at a high volume, putting far more rounds on target for far less cost than with advanced missiles. Although they are limited by their range, modern naval guns can pack a punch at closer distances. This could be especially important in littoral areas where engagements may occur suddenly at much closer range than predicted or in surprise attacks arising from adversary gray-zone operations. Such attacks could be at close range using massed unmanned aircraft or surface ships or vessels disguised as non-combatants. Naval guns can engage at ranges too close for missiles and rapidly put a high-volume of fire on multiple targets. Naval gunnery should remain a mainstay of Navy offensive and defensive weaponry.

In the past, the U.S. fleet was composed of various ship types and classes specialized for their particular roles. This spread capability, limited cost, and avoided the use of capital ships for tasks lesser ships could handle. There were various classes of aircraft carrier, battleships, cruisers, destroyers, destroyer escorts or frigates, patrol boats, submarines, and amphibious ships. For example, there were heavy and light cruisers as well as anti-aircraft cruisers, each armed and equipped for their specific mission. The fleet was also supported by tenders which conducted repairs and maintenance at sea.

Today, most U.S. ships fall under the category of large-scale combatants, including aircraft carriers, guided missile cruisers, guided missile destroyers, and amphibious ships, with little variation of capability within each type of ship. All surface ships are considered multi-function and lack the specialized capability and training that a more diverse fleet provides. Additionally, the Navy organizes its main striking power around Carrier Strike Groups, which are focused primarily on conducting strike missions ashore (with an airwing smaller than ever and even more homogenized than the fleet) rather than the Carrier Battle Group of the past, which was focused on defeating enemy fleets at sea in addition to strike missions. The result of these changes is a fleet which is less flexible and has lost some of its capability through homogenization.

The fleet as currently constructed was designed for an era when it was not at significant risk from advanced enemies, whether by naval, air, or missile threat. It was designed to maximize its combat capability and technological advantage against enemies ashore which could not hold a candle to its power and capability. This is no longer the case. These complex ships are too fragile for modern naval combat and their primary threats once again come from under and on the sea, as well as the air. With exorbitant

cost and long construction times, built with a planned service life of multiple decades, they are not optimized to go toe to toe with another first-rate navy. The Navy must therefore maximize the advantages it currently possesses while ensuring that new construction is sufficiently robust, capable, numerous, and affordable to absorb the blows it will be dealt and still sail to victory at sea over its most likely enemies.

Infrastructure ashore

The problems of the diminished size and capability of the sealift, naval and merchant fleets are compounded by a paucity of infrastructure ashore for constructing, maintaining, and repairing ships of all types. There are few government navy yards left in operation and few private ship builders. The Navy has limited drydocking resources, with the average age of the facilities being over 80 years old. This is not a sustainable model for expanding the fleets and maintaining them during wartime. It is impossible to regenerate combat or sealift power lost at sea without sufficient infrastructure ashore. This requires shipyards, drydocks, cranes and other infrastructure, the manufacturing base to produce the required components, and a large workforce with the technical skills to do the work.

American success in WWII relied upon the massive shipbuilding effort which began in the 1930's. This included growth of both public and private shipbuilding. American shipbuilding went from a trickle in the early 1930s to production on an unprecedented scale by the end of the war, with the industry employing over 1.7 million workers. These shipyards ran around the clock, building new ships and repairing battle damaged warships that limped into port, getting them back to sea and back in the fight at a remarkable rate. Liberty ships were built in assembly-line fashion at shipyards around

the country in quantity and timeframes measured in days and weeks. While this massive shipbuilding effort was dramatically scaled back after the war, Cold War shipbuilding continued at a rate much greater than it does today and was spread amongst a larger number of shipyards, many of which no longer exist.

The post-Cold War drawdown, base and yard closures, reduced demand for naval and merchant construction, and the problems associated with Congressional budgeting dysfunction have done significant harm to the public and private shipbuilding and repair industries. These deficiencies will make U.S. capability gaps at sea all the more painful in the event of war. In contrast, China has invested heavily in shipbuilding infrastructure, churning out naval and merchant vessels at a frenetic pace. This capacity differential risks putting the U.S. in the same spot in which it put the Axis during WWII, when the U.S. out built its adversaries at such a rate that they were incapable of sinking ships fast enough. Furthermore, the existence of limited shore-based infrastructure compounds risk. U.S. ports and shipyards are not protected against enemy attack. In the event of war, a successful enemy strike on one of the few shipyards upon which the entirety of U.S. sea power relies would be catastrophic.

WWII demonstrated the vulnerability of forward bases and infrastructure. Large naval bases and infrastructure were present at Pearl Harbor and in the Philippines. These came under attack by the Japanese at the start of the war, along with smaller outposts like Wake Island and Midway. It was only through a fortuitous decision by the Japanese during their sneak attack to target American warships moored at Pearl, rather than the fuel tanks, drydocks, and other infrastructure ashore, that the U.S. avoided damage which would have been catastrophic to its ability to wage war at sea, potentially for years.

General George Patton is reputed to have said, “Fixed fortifications are a monument to the stupidity of man.” While there is an element of truth to this regarding their vulnerability in terms of naval strategy, forward bases are essential to keeping the fleet present where needed and in the fight when war comes. Forward naval bases are, however, inherently vulnerable to enemy attack. They are immobile and their location is known to the enemy.

Today, forward U.S. naval bases, such as those at Guam and in Japan, are vulnerable to enemy air or missile attack. Much of the infrastructure, including repair facilities, airfields, hangars, magazines, fuel storage, and pier-side repair equipment, is not hardened or fortified against attack. Active defensive measures to counter an enemy attack are also limited as they were seen as unnecessary with the end of the Cold War. This is a major vulnerability to U.S. naval capability as American ships at sea will not long be able to stay in the fight without forward bases to keep them fueled, armed, supplied, and in good repair. Just as much as the defenses of Hawaii prior to December 7, 1941 were geared towards the possibility of asymmetric attack through sabotage rather than enemy air attack, U.S. defensive measures today are similarly postured.

Strategy

U.S. naval and maritime strategy of the post-Cold War period is seriously wanting and completely inadequate to the current geopolitical situation and the demands of great power competition. The 1992 ...*From the Sea* strategy envisioned a future without naval combat or peer adversaries contesting U.S. control of the sea. This strategy has been overcome by events, a fact which has been recognized by the Navy and civilian leadership. The 2017 NSS and corresponding 2018 NDS started the strategic shift but the

Navy has yet to come up with a definitive maritime strategy for the challenges of great power competition in line with those directives.

While naval leadership is attempting to bring about a strategic shift and has been discussing some new operational concepts, there remains no overarching naval strategy to deal with the specific challenges posed by China and Russia along with other ongoing adversaries and challenges, including Iran, North Korea, and violent extremist organizations. Success in WWII was built upon strategy, such as the broad-based war aims laid out in the Atlantic Charter and the Navy's war plans, including the well-known War Plan Orange. Likewise, the Navy's success in the late Cold War was driven by the Maritime Strategy, which guided all naval operations. The absence of such a strategy leaves the Navy adrift and creates downstream challenges as the Navy lacks the strategic guidance to drive specific decision making, doctrine, training and preparation.

Doctrine and Training

Finally, naval doctrine and training, which should be derived from the overall strategy, are not yet ready for great power competition. Without an overarching strategy, it is difficult to develop adequate operational doctrine and then train the fleet appropriately for the challenges it is likely to face and the objectives it will be expected to meet. While doctrine may sometimes be developed concurrently with strategy, it is beneficial when its development is preceded by strategy.

The WWII Navy benefited from the intellectually fertile interwar years as well as prior decades dating back to the turn of the century. The Navy operated as a complex adaptive system that decentralized innovation and brought creative and effective solutions to the fleet. The Fleet Problems of the 1920s and 1930s fueled the development

of naval strategy, war plans, and operational doctrine which incorporated new technologies and capabilities. The Problems provided invaluable training to naval leadership and to the fleet as a whole, preparing them for the challenges they later faced during WWII and enabling the Navy to quickly adapt to setbacks and unanticipated problems. The war at sea may have gone very differently without this training.

During the late Cold War, Navy doctrine and training were driven by the Maritime Strategy, which set the tone for naval operations throughout the 1980s. As part of this strategy, the Navy conducted complex large-scale exercises to develop doctrine for multi-carrier operations, operations in all climatic conditions, in the littoral waters close to the U.S.S.R. and Warsaw Pact nations, joint and combined operations, and deception operations to achieve operational surprise. These exercises trained the fleet and honed its capability while pressuring the Soviets in furtherance of U.S. grand strategic objectives. This successful strategy ultimately convinced them they could not win at sea, contributing to the peaceful end of the Cold War.

The Navy has not conducted training on this scale in many years. While it has recently put forth operational concepts such as distributed maritime operations and littoral operations in a contested environment, it needs to develop doctrine to make these concepts work. It lacks the doctrines necessary for operations in large task groups and task forces as well as operating in a network denied environment. The modern Navy relies heavily on its networks, a fact likely to be exploited by its adversaries. Degradation of these networks could lead to failure if the Navy does not have doctrine in place for operating under such an eventuality.

Future training exercises and fleet problems should thoroughly test these capabilities so that the Navy can learn how to exploit the adversary's technological vulnerabilities and how it can most effectively protect its own and operate in the network denied environment. These should not be scripted exercises, but ones in which real world problems and solutions can develop. While appropriately focusing on high-end naval combat, the Navy should keep a weather eye on the asymmetric challenges it faces, particularly in the field of unmanned systems and gray zone operations. The Navy needs to develop tactics to deal with these challenges, however, it is also important that policy makers devote significant attention to the issue as well. Solutions may involve adjusting the rules of engagement or even U.S. engagement in gray zone operations of its own against adversary points of vulnerability. Such decisions, however, of necessity involve political calculations regarding escalation risk and the strategic objectives behind such operations. The U.S. need not only play defense against such adversarial actions. Examination and testing of operational concepts during naval training exercises can develop options and potential courses of action available for selection by policy makers.

Doctrine and training for the sealift fleet are lacking as well, although some steps have been taken to correct this deficiency since 2017. Civilian mariners lack updated doctrine and training for convoy operations, operations in contested waters, and for confronting the other likely challenges of keeping combat forces supplied in a peer war. Doctrine and training for the essential maritime logistics force is just as important as it is for the combat fleet. This is especially true given the limited size of the sealift fleet, making each ship and mariner exponentially more valuable.

Recommendations

These conclusions lend themselves to several recommendations for preparing the sealift and naval combat fleets for the challenges of great power competition. Broadly speaking, they are as follows:

The Navy must focus on **restoring readiness** by allocating sufficient resources to ensure the fleet can meet and sustain the demands of regular operations while also being prepared for war, which could come with little warning. Some resources must be kept in reserve to allow for a surge capacity in the event of crisis. Readiness of the Navy combat fleet and the sealift fleet must be prioritized. **Grow the fleets.** New construction of naval warships must be accelerated. Prioritization should be given to ships with proven, existing technologies. In an era of diminishing defense budgets, the current number of advanced warships, including aircraft carriers, should be maintained until the end of their service lives. New construction can then focus on smaller, less expensive, single-mission ships. The sealift fleet should be recapitalized and grown by a combination of new construction and the purchase of suitable used vessels in good condition. Training and employment of civilian mariners should be incentivized to grow the manpower pool available to crew these ships in the event of war. Expansion of the fleet, however, must not come at the expense of readiness of the existing fleet.

Diversify the fleets. In addition to high-end, expensive and complex warships, smaller, single-mission, cheaper, and more expendable ships should be added to the mix. New technology should be evolutionary rather than revolutionary. While unmanned vessels will play a role in the future, they should not be pursued at the expense of the proven capability of manned ships. Construction of new warships based on existing

successful designs should be considered to cut lead times and development costs. The sealift fleet should also diversify and include a larger number of smaller ships to spread risk and lift capacity.

Recapitalize, expand, and invest in infrastructure ashore to build, maintain, and repair ships. Government yards should be modernized and expanded where appropriate. Partnership with private shipbuilders and shipyards should be pursued to expand capacity. The shipbuilding and repair industry should be incentivized as should training and employment of skilled workers. Budgetary certainty is required for yards to operate at high capacity and deliver new and repaired ships with the greatest efficiency.

Harden forward bases and critical infrastructure. The renewal of peer competition and the advances in air, naval, and missile technology make forward bases and domestic, shore-based infrastructure increasingly vulnerable and attractive targets. By necessity, naval and maritime infrastructure exists on the coastline, where it is vulnerable to attack by air, surface, or subsurface threats. Both active and passive measures must be instituted to protect against attack and minimize the damage to infrastructure and destruction of essential supplies resulting from a successful attack.

The Navy must develop a maritime and naval strategy which comports with the guidance of the 2017 NSS and 2018 NDS. This strategy should provide specific guidance to the fleet to properly drive prioritization, decision making, and preparation. Such a strategy should also include the Navy's sister sea-services; the Marine Corps, Coast Guard, and Merchant Marine. This strategy should provide for joint operations with the Air Force and Army in support of maritime objectives. Last, but not least, U.S.

maritime strategy must include key allies and leverage their geographic position, resources, infrastructure, and sea power for maximum effect.

The Navy must develop updated doctrines for combat and logistic operations in light of its strategic goals, its likely adversaries, its capabilities, and the threats it faces. These doctrines must be developed now so that in the event of war, commanders and sailors know what is expected of them and can execute accordingly, even in the challenge of a network denied environment. Doctrine must also be established for cooperation and coordination of combat forces and logistics ships, including civilian-crewed merchant ships, in a contested environment and a littoral environment congested with civilian sea and air traffic in addition to the military threats. This should include preparation for action at close range, perhaps even closer than that generally anticipated in the age of missile warfare. Doctrine and operating concepts should also be developed to address the asymmetric challenges posed by unmanned systems and gray zone operations. All personnel must be trained based on these doctrines in the necessary tactics, techniques, and procedures necessary to succeed. Large scale exercises, such as the upcoming Large-Scale Exercise 2020, must be conducted on a regular basis to develop and adjust doctrine as necessary and ensure the fleet is trained to operate cohesively in the modern conditions of naval warfare.

Naval doctrine for the challenges posed by the speed of modern warfare and the likelihood of operations in a communications and network denied environment will rely on empowered and capable naval leadership. The Navy's effort to implement a "Mission Command" philosophy is a step in the right direction. As Mahan would attest, good leadership is critical to winning a fight at sea. Unfortunately, too often during peacetime,

institutional leadership gravitates towards risk aversion and administrative purity over innovation, calculated risk taking, and audacity. Peacetime bureaucratic incentives, evaluation, and promotion processes regularly fail to place into leadership those most capable of winning a fight in favor of those who do not rock the boat. The history of American military and naval leadership is replete with early wartime failures requiring replacement of ineffective commanders with those leaders who have what it takes to succeed in battle.

The Navy must develop and promote the leaders now that it will need to face the challenges of war against a first-rate naval competitor. It should adjust its incentive, evaluation, and promotion processes to ensure that such leaders are given the opportunity to advance. It must discard the zero-defect mentality that discourages risk-taking in favor of one which allows reasonable mistakes and favors boldness. Competency, character, and judgement as always will be essential in the naval leaders of today and tomorrow. Higher echelons of command must clearly articulate commander's intent, trust their combat leaders and empower them to make decisions based on that intent in a rapidly evolving environment. Accountability should not be used as a tool to stifle initiative, decision making, or calculated risk taking. In a communication denied environment, leaders must be capable of making effective decisions aligned with the overall mission objectives and higher echelon commanders' intent. For mission command to work, quality leadership must be in place and theatre commanders must clearly articulate their intent and trust their subordinate commanders to execute it. This requires a long-term investment in leadership which must start today. Selecting the right leaders is never easy, but in an era of diminishing financial resources, an investment in developing and

enabling solid leadership will pay dividends. Naval doctrine must be geared towards relying on the leadership of its commanders at sea.

Implementation of most of the above recommendations will be expensive. There is no getting around that fact. Congress must fix its budgeting dysfunction, however, to enable the budgetary certainty which would allow the Navy to conduct long term planning and budgeting. Budgeting by continuing resolution hampers this ability and also causes private industry (which supports the navy and sealift fleets, including shipyards) to have difficulties planning, budgeting, and retaining qualified personnel when their operations are subject to the whims of short-term Congressional outlays. In addition to authorizing the funding necessary to address the deficiencies noted in this research, Congress must ensure that its funding process matches the long-term needs of the Navy as it seeks to compete in the high-stakes game of great power competition.

While the Navy set its goal of attaining a 355-ship fleet by 2030, it is unclear whether it is adequately advocating for the resources it needs. The Navy seems to have accepted that it has entered an era of diminished resources and is planning accordingly. Some in Congress are concerned that frequent changes in the Navy's long-range shipbuilding plan are introducing uncertainty to the industry. They have also expressed concern that the Navy's submitted budget for fiscal year 2021 is inadequate to the challenges posed by China, as it has even called for a reduction in new construction.³⁰⁰ It is unclear therefore whether the Navy is effectively advocating for its own critical interests. It needs to understand itself what it needs and clearly articulate those needs in a

³⁰⁰ Eckstein. "Lawmakers".

manner that can be easily understood by the public and the elected representatives whose support it will require.³⁰¹

Despite the questionable success of its advocacy efforts, there are some positives. Admiral Phil Davidson, combatant commander of the Indo-Pacific region, has proposed a funding request which Congress seems likely to approve and which would strengthen U.S. military power in the region. The purpose is to counter the threat of China, enhance deterrence, and improve U.S. military and naval capability. The request includes several items cited in this research, including investments in infrastructure and logistics, forward base dispersal and hardening, training, experimentation and innovation, strengthening of allied forces, offensive and defensive capability, and force design and posture.³⁰² Approval of this request and the effective use of those funds would help shore up the Navy's and joint force's position relative to China in the short term. More, however, will need to be done.

In addition to requesting increased funds, the Navy and the Defense Department at large will have to look at overall force structures, priorities, and funding. Given the priorities of the NSS and NDS, as well as the increased importance of the maritime domain to those priorities, the Navy may be positioned to argue for a larger share of the overall defense budget. This would mean cutting some other capabilities, such as land forces, that do not align as directly with the current security landscape. Each of the services will have to justify their requests and their share of the defense budget. The

³⁰¹ James R. Holmes. "Naval Integration Strategy Needs to Be Written in Plain English." *U.S. Naval Institute Proceedings*. 2020; 146(4).

³⁰² Aaron Mehta. "Inside US Indo-Pacific Command's \$20 billion wish list to deter China – and why Congress may approve it." *DefenseNews*. April 2, 2020. <https://www.defensenews.com/global/asia-pacific/2020/04/02/inside-us-indo-pacific-commands-20-billion-wish-list-to-deter-china-and-why-congress-may-approve-it/>.

Navy should be prepared to aggressively make the case for its needs based on the current NDS, especially given that it largely took a back seat to operations on land over the past decades. The Navy will also have to reevaluate its force posture and deployment schedule to account for current strategic priorities given its limited resources.

The public has a role to play as well in ensuring the sea power of the nation. It must inform itself and take an interest in American sea power. The Navy, merchant marine, and supporting industries rely on Americans to fill their ranks. Those not so engaged must still understand the importance of sea power to the American way of life, its economic well-being, and national security. By being so informed, the public may be more actively involved in ensuring that its sea power is sufficient for the nation's needs. Such public support by an engaged citizenry should translate into the political will necessary for policy makers to adequately fund and conduct oversight of the nation's sea power so that it may remain always ready, whatever the challenge.

Policy makers will also need to prioritize and make tough strategic decisions when it comes to projecting American power abroad. No matter the level of funding, the U.S. cannot effectively be simultaneously present everywhere in the world or solve all of the world's problems. The 2017 NSS has taken a step in the right direction by realigning national security strategy with the changing threat environment. Difficult decisions yet remain. Fortunately, recent increases in American fossil fuel production make it less reliant on Middle Eastern oil, paving the way for a drawback in military presence in that contentious region. The continued need to engage in stability and counterterrorism operations will have to be considered, however, in light of the need to prioritize security needs vis-à-vis China and Russia. How to arrive at those decisions is beyond the scope

of this paper, but policy makers and the public must understand that tradeoffs will have to be made.

Navalists and national security experts who write on the topic of America's sea power are doing their part. The Navy must also do more to get its message to the public and improve its brand. On a positive note, much like during the interwar years, when Hollywood produced a series of films about the Navy that increased its public profile, the current and last few years have seen several major motion pictures featuring the Navy, helping to bring it back into the public consciousness.

More effort should be placed, however, on the educational system. Most students are not taught the importance of sea power or its role in securing American prosperity and national security. Western and U.S. history has been deemphasized in many curriculums, leaving American youth ignorant of sea power's importance and relevance to national security and economic prosperity. The Navy and the federal government should encourage or sponsor programs and courses at all levels of education to raise awareness of this vital topic. Courses at the high school, collegiate, post-graduate, and adult learning levels could help inform a greater portion of the population, leading to a more engaged public. Continued efforts on all of these fronts will be required to generate public interest, a necessary precondition to an informed public which will be vocal in demanding that U.S. sea power remain vibrant into the future.

Recent events surrounding the global novel-coronavirus 2019 (COVID-19) pandemic provide both an opportunity to put forth in the public domain a larger discussion of the importance of sea power, global commerce, and American economic prosperity as well as the national security dangers posed by an authoritarian, predatory,

and malign regime in the People's Republic of China.³⁰³ The Navy and American policy makers should not let this opportunity pass. Unfortunately, the economic aftereffects of the COVID-19 pandemic are likely to further constrict defense budgets. It is therefore even more important that the Navy argue forcefully for its requirements. Competition with China is occurring in all domains; diplomatic, economic, informational, space, intelligence and military. The maritime domain is at the forefront of each of these areas and this would be the wrong time for the U.S. to allow its sea power to lapse.

Limitations

A complete study of American sea power is beyond the scope of this thesis. Indeed, this study barely touches on several critical areas of naval power. The preceding research focused primarily on logistics and naval surface warfare. While briefly mentioned, undersea warfare was not addressed except in terms of the threat it poses to maritime logistics. U.S. submarines play a critical role in naval strategy both offensively and defensively, to include a vital part of America's strategic nuclear deterrent. The research also largely left untouched the modern domains of space and cyber warfare. Artificial intelligence and unmanned systems and their effects on future warfare were not addressed. Lastly, broad issues of grand strategy and how allies can be used to enhance naval capability were beyond the scope of this thesis. It should therefore be remembered that there is even more to the story.

³⁰³ Christopher R. O'Dea. "The Dark Shadow of Chinese Globalization Falls over Italy." *National Review*. March 31, 2020. <https://www.nationalreview.com/2020/03/dark-shadow-chinese-globalization-falls-over-italy/#slide-1>. and Christopher R. O'Dea. "Restore America's Commercial Sea Power." *National Review*. April 2, 2020. <https://www.nationalreview.com/magazine/2020/04/20/restore-americas-commercial-sea-power/#slide-1>.

One final limitation regarding this research is in the implementation of its recommendations. In order to address many of the deficiencies noted and ensure American sea power is prepared for the challenges it will face, investment will need to be made in infrastructure, ships will need to be built, technologies developed, and additional expenses incurred. This will cost billions of dollars. While the author believes such investment needs to be made, there is a big difference between recognizing the problems and their potential solutions and outlaying the necessary funds to pay for them. Those solutions which do not require major funding outlays should be implemented as soon as practicable. For those requiring major investment, the Navy must make the case for such funding. As stated in the introduction to this thesis, it is the American public, through its elected representatives and policy makers, that must choose. They must have the facts, they must understand history, and they must be aware of the likely consequences of a failure to act. While there are indeed financial limitations to be confronted in the implementation of some or all of the recommendations, it was the objective of this research to provide a clearer understanding of the issues, the situation the U.S. faces today, and what is required to prevent catastrophe in the future.

Recommendations for future research

The aforementioned limitations lead to some questions which lend themselves to further research. The first category of research involves the composition of the fleet. One such question is how the Navy should balance and allocate its forces between the different domains as it faces the challenge of Great power competition. In other words, how much of the force should be composed of submarines versus surface ships? How

should the Navy integrate unmanned systems (surface, subsurface, and air) and in what proportion to the fleet? Another question which is very relevant to this time of increasing threats with limited budgets relates to manpower. Recent Navy initiatives to cut manning on board ships to “optimal” levels has placed greater strain on the sailors aboard those ships and was arguably a contributing factor to the tragedies of 2017. While technology and automation reduce the need for personnel in peacetime from an efficiency standpoint, too great a reduction in personnel can have catastrophic effects in wartime when effectiveness, redundancy, and survivability, not efficiency, are most critical. A solution which allows for flexibility and efficiency during peacetime, but expansion and effectiveness during wartime, may be needed. This is a topic which is worthy of further study as the Navy seeks to find the best solution to the manning problem.

Secondly, research on the capability of the U.S. to quickly mobilize its industrial base in the event of a major and protracted war should be conducted. Can U.S. manufacturing be mobilized to the extent it was during WWII? How long would it take to have an effect on the war effort and how quickly could the U.S. mass produce ships, aircraft, munitions, and other components to fight and sustain a war at sea? Since the advent of nuclear weapons, it has often been assumed that there would never be another major conventional war between rival great powers. It has therefore been assumed that such a mobilization would not be needed. It is quite possible, however, that the U.S. and China could fight a major war primarily in the air, sea, and littoral regions (as well as in the space and cyber domains) that does not escalate to a nuclear exchange but is nevertheless long and bloody. Research should be done to determine how the U.S. can best prepare its industrial base to confront such a challenge.

A third avenue of future research involves the optimal force structure for the U.S. Defense Department given the current threat landscape and the objectives of the 2017 NSS and 2018 NDS. What is the appropriate balance between land, air, and sea power? How does the addition of cyber and space domains affect the force structure? How should each of the services structure their respective capabilities? These are questions which go beyond just the Navy but bear on future defense budgets, force posturing, and military preparedness.

Fourth, additional research could be conducted regarding how the Navy can best promote the nation's sea power to the American public, its elected representatives, and policy makers. The strength of American naval and civilian sea power relies on the will of the American public. Future research might focus on how the Navy has promoted itself in the past or how the Marine Corps has been successful in its public relations efforts. The effects of the closure and consolidation of military and naval basing facilities and critical maritime industries, such as ship building, on Congressional advocacy for sea power interests could be examined. Increasing the number of Congressional districts with constituents tied to the Navy and maritime industries might increase advocacy and support within Congress for reestablishing American sea power. Successful public relations campaigns for government programs or industries of which the American public are not direct consumers but benefit indirectly from could also yield potential strategies for bolstering sea power advocacy efforts.

Finally, as mentioned above, ensuring the U.S. has the maritime logistics capability and naval power it needs is going to be expensive. Decisions made over recent decades have left the fleet unprepared for the challenges of great power competition.

Popular support and political will need to be developed to ensure that the Navy receives sufficient funding to address its shortfalls in sealift and combat power. This is a challenge at a time when the nation is weary from two decades of fighting terrorism and the wars in Iraq and Afghanistan. Additionally, those wars were primarily ground campaigns in which the Navy received little visibility. Despite its cost, the public generally has little appreciation for the importance of and value provided by the U.S. Navy and American sea power generally. The Navy, however, has faced similar challenges in the past. Further research should be conducted into how the Navy has previously succeeded in generating the public support and political will necessary to fund naval growth in preparation for the challenges it would be called upon to face.

Conclusion

The information developed during this research and the conclusions it reached are alarming. The public is not generally aware of the state of the nation's sea power, its startling deficiencies, or the challenges before it. These issues are the result of conscious decisions made over time by policy makers and naval leaders, enabled by the general neglect of public attention to this important pillar of the U.S. national interest. Such inattention has been characteristic throughout much of American history since the early 19th Century. Fixing the problems identified will not be easy. It will not happen quickly. It will not be cheap.

The Navy is likely to face a reckoning at the hands of its adversaries as it is quite possible that it will be unable to fully prepare itself for war before one arrives. History is replete with examples of strategic miscalculations or deliberate aggression which has

resulted in the outbreak of wars many thought beyond the realm of possibility. These are perilous times. Recent events related to the COVID-19 pandemic and China's role in its onset add a new aspect to an already dynamic geopolitical situation. The time to prepare is now. American sea power is essential, not only to defeat the most likely military threats the U.S. faces in this renewed era of great power competition, but to hopefully deter any such conflict. While today's situation is critical, all Americans can take heart in their maritime and naval heritage, throughout which initial defeat and long odds have heretofore been overcome through the courage and determination of the American sailor and mariner.

Whether a democratic government will have the foresight, the keen sensitiveness to national position and credit, the willingness to insure its prosperity by adequate outpouring of money in times of peace, all which are necessary for military preparation, is yet an open question.

*-Alfred Thayer Mahan, 1890
The Influence of Sea Power Upon History³⁰⁴*

A powerful Navy we have always regarded as our proper and natural means of defense; and it has always been of defense that we have thought, never of aggression or of conquest. But who shall tell us now what sort of Navy to build? We shall take leave to be strong upon the seas, in the future as in the past; and there will be no thought of offense or provocation in that. Our ships are our natural bulwarks.

-President Woodrow Wilson, 1914³⁰⁵

³⁰⁴ Mahan. *The Influence of Sea Power upon History*. 67.

³⁰⁵ Woodrow Wilson. "An Annual Message to Congress." Dec. 8, 1914. Arthur S. Link, ed. *The Papers of Woodrow Wilson*. vol. 31. Princeton University Press: Princeton. 1979; 423.

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Curriculum Vita

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